THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Tennessee Oil Men's Association, Peabody Hotel, Memphis, Tenn., July 22.

Independent Oil Men's Association of New England: Fall River, Mass., Aug. 14; Providence, R. I., Sept. 11; Worcester, Mass., Oct. 9.

North American Gasoline Tax Conference, Book-Cadillac Hotel, Detroit, Mich., Aug. 7, 8, and 9.

American Petroleum Institute division of development and production engineering, Texas-Louisiana-Arkansas district, Galvez Hotel, Galveston, Tex., Sept. 5, 6.

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 18, 19, 20.

Ohio Petroleum Marketers Association, Deshler-Wallick Hotel, Columbus, O., Sept. 18, 19.

Rocky Mountain Oil & Gas Association, Montana division, Calgary, Alta., Sept. 18, 19, 20.

National Safety Council, Petroleum Section, Congress Hotel, Chicago, Sept. 30, to Oct. 5.

International Petroleum Congress, Tulsa, Oct. 5 to 12.

Big Four State Jobbers (Missouri, Kansas, Nebraska and Iowa), Kansas City, Mo., Oct. 15, 16, 17.

Independent Oil Men of America, Stevens Hotel, Chicago, Oct. 21, 22, 23.

NATIONAL PETROLEUM NEWS

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General

Revamp of world gasoline markets is subject for London conference of Export Petroleum Association officials 27
Second suit attacks public land withdrawal order..... 28
Code to be made public on July 25..... 28
Two-cent higher gasoline prices to follow oil duty it is asserted..... 29
Supply of Pennsylvania grade crude oil to increase in coming years..... 31
Sasakwa oil field starts its boom with 40 new operations..... 33
Kettleman Hills operating agreement is submitted..... 35
Gray county, Texas, getting the play in new Panhandle drilling..... 36
Judge Germany is dead 38
Review of late production news 39
Pennsylvania grade crude oil price reduced..... 39
Completions and showings indicate reserves in southeastern New Mexico 40
Must get permit to sell gasoline in Texas..... 40
Handling pipe in Seminole discussed by A. P. I. engineers..... 41
Hu. M. Harris is chief mechanical engineer of Humble Oil & Refining Co. 41
Boykin sells to International Derrick 41
New Oklahoma pools are in the making..... 47
Standard of Indiana buys half interest in Amerada Petroleum Corp.'s acreage in Oklahoma and Kansas 48
California total production has small gain..... 52
Drilling reports from leading fields 54-56
Ford again disavows Alemite circulars 79
A page of West Texas refinery superintendents..... 80
Curtailment efforts shattered as May crude production sets record, Bureau of Mines' report shows 90
512 pumps counted on 184-mile road 118
Joe Conrin heads subsidiary of Columbian Steel Tank Co. 119
U. S. crude production and imports, week ended July 13..... 121
N. P. N. Mid-Continent refinery statistics, week ended July 12..... 122
Gas tax limit is subject for collectors' conference next month..... 143

Engineering

Uinta pipe line to provide outlet for big gas reserve in Wyoming..... 57
Gas pipe line to El Paso built from Jal, N. M. 63
Economies in small well production—*by Allison C. Dyer*, the end..... 64
Filling shot hole with gravel reduces trouble from sand and cavings..... 69
Comments on Dr. Haseman's well spacing articles..... 74
Gasoline replaces water as refluxing agent at Mission pool plant..... 76
How Gulf Refining Co. manufactures anhydrous aluminum chloride—*by A. M. McAfee* 83

Merchandising

Under-surface loading of gasoline cuts down evaporation losses—*by George A. Marsh, Jr.* 104
Please the eye first says marketer whose flowers attract customers..... 115

Markets

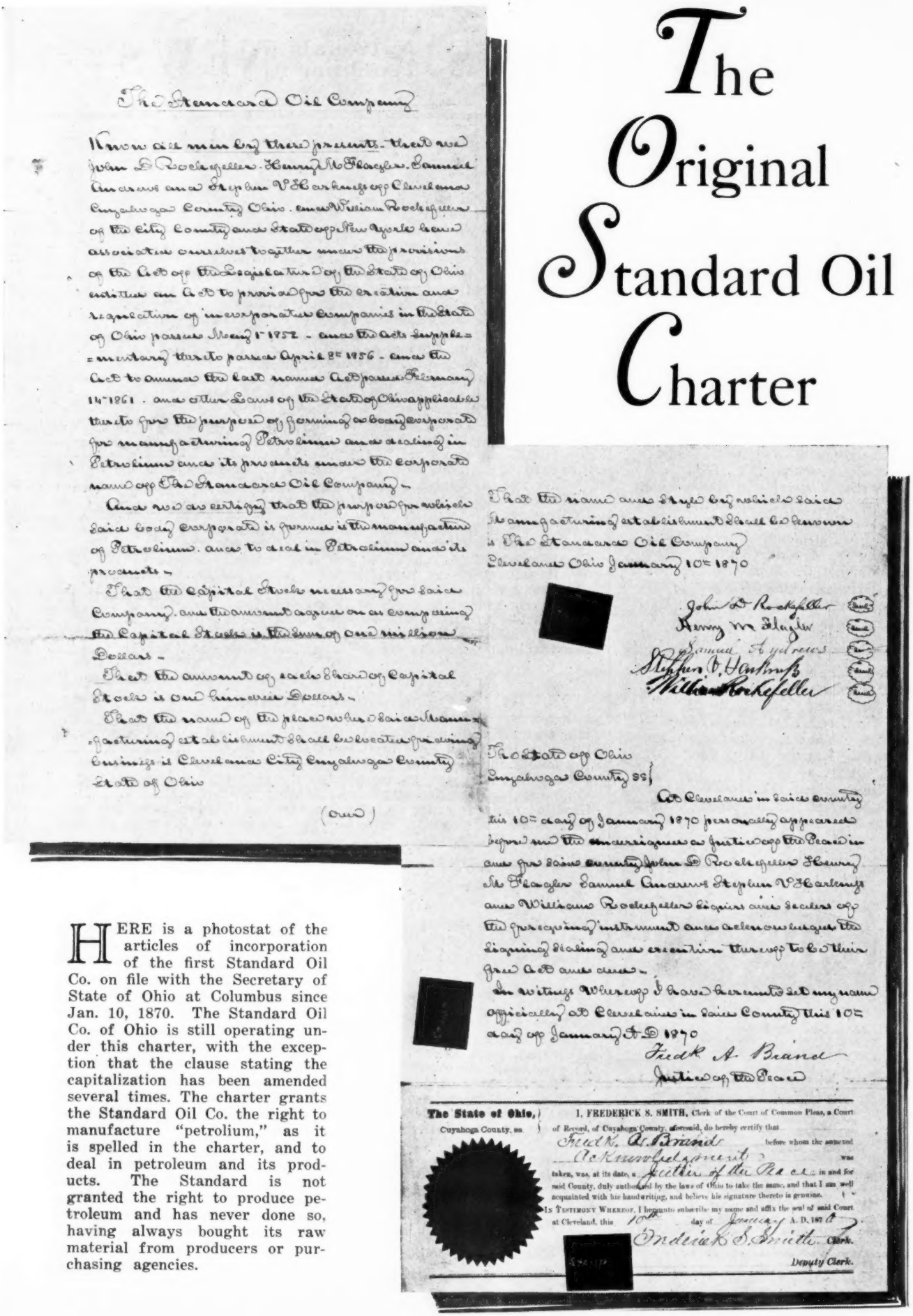
Mid-Continent, gasoline price reduced to meet competition from other areas, page 125.
Chicago, gasoline prices fall as buying lags, page 127.
California, cargo of gasoline sold at 7 cents, page 134.
Pennsylvania, large kerosene purchases made, page 135.
New York domestic, demand quiet, price unchanged, page 136.
Gulf export, two French cargoes sold, page 136.

Refinery price tables.....128, 130, 131
Complete seaboard prices..... 138
Tank wagon price tables.....140, 141
Crude oil prices, all fields.....143, 145

Departments

The Editors' Viewpoint 43
The Mid-Continent Skyline..... 45
Our Industry 50
New Equipment 72
New Stations Building..... 88
Visiting Around the Refineries..... 89
On the Lazy Bench 120
Oil Company Finance.....146-150
New Books 151

The Original Standard Oil Charter



The Standard Oil Company

Know all men by these presents. that we John D Rockefeller. Henry M Flagler. Samuel Andrews and Stephen V Harkness of Cleveland Cuyahoga County Ohio. and William Rockefeller of the City County and State of New York have associated ourselves together under the provisions of the Act of the Legislature of the State of Ohio entitled an Act to provide for the creation and regulation of incorporated Companies in the State of Ohio passed March 1st 1852 - and the Acts Supplementary thereto passed April 2d 1856 - and the Act to amend the said named Acts passed February 14th 1861 . and other Laws of the State of Ohio applicable thereto for the purpose of forming a body corporate for manufacturing Petrolium and dealing in Petrolium and its products under the corporate name of The Standard Oil Company -

And we do certify that the purpose for which said body corporate is formed is the manufacturing of Petrolium. and to deal in Petrolium and its products -

That the Capital Stock necessary for said Company. and the amount actually employed in carrying the Capital Stock is the sum of one million Dollars -

That the amount of each Share of Capital Stock is one hundred Dollars -

That the name of the place where said Manufacturing establishment shall be located or carried on is Cleveland City Cuyahoga County State of Ohio

(and)

That the name and style by which said Manufacturing establishment shall be known is The Standard Oil Company
Cleveland Ohio January 10th 1870

John D Rockefeller (Seal)
Henry M Flagler (Seal)
Samuel Andrews (Seal)
Stephen V Harkness (Seal)
William Rockefeller (Seal)

The State of Ohio
Cuyahoga County ss

Be it Cleveland in said County this 10th day of January 1870 personally appeared before me the subscriber one of Justices of the Peace in and for said County John D Rockefeller Henry M Flagler Samuel Andrews Stephen V Harkness and William Rockefeller Esquires and Sealers of the foregoing instrument and acknowledged the signing sealing and executing thereof to be their free act and deed -

In witness Whereof I have hereunto set my name officially at Cleveland in said County this 10th day of January A D 1870

Fredk A. Brainard
Justice of the Peace

The State of Ohio, Cuyahoga County, ss.

I, FREDERICK S. SMITH, Clerk of the Court of Common Pleas, a Court of Record, of Cuyahoga County, aforesaid, do hereby certify that Fred'k A. Brainard before whom the annexed Acknowledgement was taken, was, at its date, a Justice of the Peace in and for said County, duly authorized by the laws of Ohio to take the same, and that I am well acquainted with his handwriting, and believe his signature thereto is genuine.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of said Court at Cleveland, this 10th day of January A. D. 187 0

Frederick S. Smith Clerk.
Deputy Clerk.

HERE is a photostat of the articles of incorporation of the first Standard Oil Co. on file with the Secretary of State of Ohio at Columbus since Jan. 10, 1870. The Standard Oil Co. of Ohio is still operating under this charter, with the exception that the clause stating the capitalization has been amended several times. The charter grants the Standard Oil Co. the right to manufacture "petrolium," as it is spelled in the charter, and to deal in petroleum and its products. The Standard is not granted the right to produce petroleum and has never done so, having always bought its raw material from producers or purchasing agencies.

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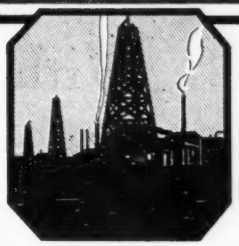

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Revamping World Gasoline Shipments Subject for London Conference

By Cable
LONDON, July 15

THE conference of representatives of the Export Petroleum Association of the United States and large European groups will open in London Friday, July 19. The ostensible subject of the conference will be the export gasoline price, but discussion must embrace curtailment of crude oil production.

Shipments to consuming countries from the nearest sources of supply will be discussed. For example, discussion will embrace the question whether England should be supplied from America and not from Persia, and whether the Far East should be supplied from Persia and not from America.

Russia is still an obstacle to a general agreement about world markets, due much to Russian products seeking a market. But Russia will be less formidable in the near future because Russia is developing a domestic market for its petroleum products, notably tractor fuel.

The conference is feared by the English public as tending toward higher gasoline prices. The Shell and the Anglo-Persian Oil Co. are believed to be unwilling to increase the price and hence may not agree fully to the American request.

As an alternative to an increase in price the plan of systematized shipment is expected to be submitted as a means to obtain the same end. It is believed here that savings in shipping expenses by supplying consuming countries from the nearest sources of supply will give the supplier the same thing as an increased export price.

Several of the delegates are actively studying the problem first hand, but it is impossible to forecast the course of the conference.

Preliminary work toward a curtailment of world production of crude oil was done last summer at a conference in Scotland by Walter C. Teagle, Standard Oil Co. of New Jersey; Sir Henri Deterding, Royal Dutch-Shell group, and Sir John Cadman, Anglo-Persian Oil Co. Further progress was made early this year when Deterding visited New York.

It is believed here that curtailment in Venezuela will be discussed. All principal producers there are said to be in line except the Gulf which is delaying curtailment due to its large contracts. Standard of New Jersey also is curtailing production in Colombia by 20,000 barrels daily.

Discussion of Crude Curtailment Held Not Likely

CLEVELAND, July 15

DOUBT that curtailment of world crude oil production would be undertaken by the conference of American and British petroleum groups on export gasoline prices in London, England, July 19, was expressed in New York and Pittsburgh today.

With the exception of R. C. Holmes, president, The Texas Corp., the American delegation, which is a committee from the Export Petroleum Association, Inc., are marketers and not production men. Mr. Holmes, it was pointed out, did not represent any foreign production, his company's producing properties being wholly within the United States since it withdrew from Mexico.

"The Gulf Oil Corp. is not opposed to conservation and the view held in London that it is delaying curtailment in Venezuela is unauthorized," George S. Davison, vice-president of Gulf Oil Corp. and president of the Gulf Refining Co., told NATIONAL PETROLEUM NEWS.

"We are as much a free lance as regards contracts as any one in Venezuela," Mr. Davison added when read the references to his company in a cablegram from London. "The cablegram gives an erroneous impression of the present situation in Venezuela which is a long story."

The statement that curtailment of world oil production will not enter into the London conferences was reiterated today by oil men in New York who ordinarily are in a position to know. The export price of gasoline is the primary subject of the conference and if crude curtailment should be discussed it would be only incidental to the primary subject.

It was explained by a source of information close to Sir Henri Deterding, managing director of the Royal Dutch-Shell group, that Sir Henri's position today is the same as it was when he visited New York in February. At that time he held there was too much crude oil and too much gasoline to warrant an advance in the export price. Since February, it was stated, the production and stocks of both crude oil and gasoline have increased.

Cross hauling of gasoline and other petroleum products has been one of the expensive features of supplying the world markets and has entailed

the maintenance of tanker fleets considerably larger than many export authorities believe would be necessary if markets were reapportioned among the various sources of supply.

The Anglo-Persian Oil Co. for a long time has been supplying part of the United Kingdom market from Persia although hauls from North and South America are much shorter. American petroleum products have been going into the Far East and to Australia. For example, in April alone, shipments of bulk gasoline from the United States to Australia amounted to 148,520 barrels and of cased gasoline 47,396 barrels. To Japan that month went 334,204 barrels of crude oil, 120,546 barrels of bulk gasoline, and 257,122 barrels of bulk kerosene.

Whether the delegation from the Export Petroleum Association to the London conference would agree to a reapportionment would depend largely, it is believed, on whether the American export market would be diminished in favor of foreign sources of supply. Doubt has been expressed that any effort to curtail the free movement of American petroleum products would be vigorously opposed.

Studies of the world market situation are being made by a committee of the export association for some time and the committee of which Mr. Holmes is a member is expected to make a first hand study of the European market before its members return to New York to report the results of the London discussions.

Besides Mr. Holmes, members of the committee are:

R. D. Matthews, vice-president, Union Oil Co. of California; J. A. Moffett, vice-president, Standard Oil Co. of New Jersey; George P. Whaley, president, Vacuum Oil Co.; Howard Cole, Standard Oil Co. of New York; W. D. Anderson, Atlantic Refining Co., and L. B. Stanford, Sinclair Refining Co.

The London conference will bring around the same table representatives of two great factions which only two years ago engaged in a price war in India because of Russian oil. On one side are the Standard of New York and the Vacuum, which contracted with the Russian Soviet government for a certain amount of Russian oils to be marketed in territory to which the oil might be easily shipped from Russia. On the other side are the Royal Dutch-Shell and the Anglo-Persian, the latter partly owned by the British government.

A truce was reached in that controversy last year and Mr. Teagle who conferred last summer in Scotland with Sir Henri Deterding and Sir John Cadman, has been credited with being the peacemaker although his position in the controversy never became known publicly.

Second Suit Attacks Public Land Withdrawal Order

WASHINGTON, July 15

APPLICATION has been made to the Supreme Court of the District of Columbia for an order requiring Secretary of the Interior Wilbur to reinstate the application of George C. Retherford, Taft, Calif., for an oil and gas prospecting permit and for the issuance to Retherford of a permit under the terms of the national leasing law of 1920.

Retherford's application was rejected in accordance with the policy inaugurated last March. Retherford's application for a permit was filed in November, 1928.

At the time the policy was announced the application was in such condition that issuance of the permit had been recommended. Retherford had filed the necessary $1,000 bond.

The land covered by Retherford's application is in 27-24S-18E, M. D. M. California, containing 520 acres formerly covered by Sacramento 019887 and another parcel of 120 acres formerly covered by Sacramento 019319. Those applications were cancelled in July 1928 and no one asked for permits on them until Retherford put in his application.

This is the first of two suits to be filed in addition to the McLennan suit, intended to test the legality of the conservation policy of the Hoover administration in respect of oil and gas resources on the public domain. The other suit is expected to be filed shortly.

As far as can be learned there is no large financial interest back of either the McLennan or Retherford suit. In other words, if the policy is to be challenged by any large oil interest the fact is not disclosed by the names of the parties or their attorney, the latter being Lewis E. Hoffman. Attorneys for large companies have been mulling over the subject but have made no move, either in the way of beginning suits or becoming interveners in the Hoffman suits.

In his petition Retherford asserts that there is nothing in the law requiring him to make "substantial expenditures for reliable geological surveys" to give him an equitable interest in the matter.

As a foundation for that declaration Retherford quotes a report, made by the committee appointed to consider whether any of the applicants had equities in their applications for prospecting permits by reason of "substantial expenditures for reliable geological surveys" made by them in locating lands upon which they had filed applications for permits.

The committee reported, and Secretary Wilbur approved the report, that in cases where such substantial expenditures had been made prior to the filing of applications for permits, the disbursers of such moneys had an equitable interest which should be protected. That is to say, those who made surveys before filing applications were entitled to consideration greater than applicants who had not spent anything in making geological surveys prior to their filing of applications for permits.

Retherford asserts there is nothing in the law requiring such expenditures as a condition precedent to the filing of applications or the issuance of prospecting permits, under the national leasing law.

Code to Be Made Public On July 25th

NEW YORK, July 15.—The American Petroleum Institute must await the publication of the code of marketing practices for the petroleum industry before it can take any action or make any recommendations, W. R. Boyd, Jr., A.P.I. executive vice-president, said today. The institute has had no inkling yet of what the code contains, Mr. Boyd said. The Federal Trade Commission has announced it will be made public July 25.

The code has been changed by the Federal Trade Commission from the draft adopted at the Trade Practice Conference in St. Louis Feb. 11, but what the changes are no one at the commission's offices in Washington will reveal.

Copies of the code will be sent the members of every petroleum association in the United States which have given the commission lists of their members. Enclosed with the copies will be blanks which the oil marketers will be asked to sign, pledging themselves to adhere to the code.

It is doubtful whether there will be a meeting of the A.P.I. directors to consider the code because many of them will be on vacation or at their summer homes when the code is published.

Two-Cent Higher Gasoline Prices To Follow Oil Duty, Asserted

By A. E. Heiss
N. P. N. STAFF WRITER

WASHINGTON, July 15

THE question whether petroleum and its products shall remain on the free list of the tariff bill now being framed by the Senate committee on finance will probably be threshed out this week.

The House Ways and Means committee rejected the proposal of Mid-Continent producers to put a duty on crude oil, although earnestly urged to do so by Senator Thomas of Oklahoma, Former Representative E. B. Howard of that state and members of the Kansas and Texas delegations from oil producing territory.

After the House committee had rejected the proposal, the managers of the fight for the passage of the bill through the House were so emphatic in saying no to requests for a chance to vote on the subject in that body that advocates of a duty dropped the matter. They decided to concentrate their energies on the Senate finance committee and in the Senate.

The fight for a duty on oil originated in Oklahoma among Mid-Continent producers. Mr. Howard has been their representative in Washington. He spent last week in Oklahoma consulting with advocates of a duty and was expected to return early this week to be present when the Senate committee was prepared to listen to a discussion of the subject.

The present move for a duty on petroleum has been given a strong boost by the National Coal Association. That association argues that, if it is made harder for foreign crude to come into this country, there will be a closer use of domestic crude for the recovery of refined products, leaving a smaller supply of fuel and gas oil to be used in competition with coal.

Henry Gandy, executive secretary of the coal association, a former member of the House of Representatives, appeared before its ways and means committee late in the winter advocating transfer of petroleum from the free to the dutiable list, at whatever figure seemed proper.

Formidable opposition to transfer of oil from the free to the dutiable list is expected to be voiced before the senate committee, of which Senator Smoot, of Utah, is chairman. At the time this was written six men had their names put on the list of those who desired to be heard. A mere reading of the interests represented by them showed, it was believed, that most, if not all, would oppose the transfer because they represented either refiners or users of petroleum and its products.

Those to whom time to speak had been assigned were: H. Walker, for American producers in foreign fields; Carroll H. Wegemann, Pan American Petroleum and Transport Co., American companies producing abroad; Walter B. Guy, National Automobile Dealers Association; Walter M. Maguire, Petroleum Heat Power Co.; John S. Weller, South Penn Oil Co. and Penn-Mex Fuel Co.; H. B. Walker, American Steamship Owners Association; and Edwin Brownley, American Oil Co. et al., Baltimore.

Senator Tydings (Democrat) Maryland, appeared July 11 in opposition to any duty on oil. He said the United States produced about two thirds of the oil produced in the world and consumed nearly three quarters of it. It was obvious, therefore, he said, that whatever duty might be put on foreign crude would be reflected in the prices paid by American consumers.

The added expense of doing business generally, because of the increase in oil prices, he said, would be enormous. A duty of $1 a barrel on crude, he asserted would cause an increase of two cents a gallon in the price of gasoline. Such an increase, he said, would mean an increase, in the cost of farm operations alone, of $164,360,000 a year, in addition to increasing the cost of building roads and the cost of electricity on the farms.

THE increase to the public in the cost of gasoline, he said, had been estimated as much as four cents a gallon, in which event, of course, his figures, he said, would have to be doubled. An increase of four cents, he asserted, would cause an increase in the cost of operating the farms by a sum equal to fully two thirds of the sum recently appropriated by Congress for the relief of agriculture.

"Put a duty of $1 a barrel on crude petroleum and you will put the farmer back 100 per cent of where he was before the enactment of the farm relief measure" said the Maryland senator, especially, he said, inasmuch as the imposition of a duty would increase the cost of asphalt.

Nearly 70 per cent of the asphalt used in this country, he asserted, came from the refining of petroleum. An increase of $1 in the cost of a barrel of crude, equal to the proposed tariff duty, he declared, would result in an increase of $7 a ton on asphalt. Such an increase in the price of asphalt, he said, would force the abandonment of asphalt as a road-building material and reduce its use as a roofing material.

"How ridiculous," said the Maryland senator, "to talk of conservation of our oil resources and at the same time put a tax on free importation of crude. We should conserve by keeping crude on the free list. We should do that as a matter of national defense. Let the other parts of the world send us their oil and keep our own in the ground against the day when we shall need it for our national defense as well as our economic welfare."

ASSUMING that the whole oil industry was asking for a duty on petroleum and its products, Ernest N. Smith, executive vice president of the American Automobile Association, Washington, according to the publicity branch of that organization, has sent a brief to the Senate finance committee "charging that the unprecedented proposal to levy a tariff on petroleum and petroleum products is simply a screen to enable the oil industry to boost gasoline prices." Mr. Smith opposes a tariff duty.

"It has been estimated" Mr. Smith is quoted "that, should the proposed import duty be levied, the retail price of gasoline would be increased at least two cents per gallon. Based on present consumption, which is being steadily increased, this would mean an additional burden on the car owners of the nation of approximately $240,000,000 annually.

"Moreover, the proposed import duty on petroleum and its products is contrary to the oil conservation program enunciated by the United States government."

As part of his protest Mr. Smith called attention to the fact that, in 1928, the special taxes levied against users of motors aggregated $785,386,176.

Standard Oil Charter Pictured in Frontispiece

HERE is the text of the original charter of the Standard Oil Co., which was granted in 1870 to John D. Rockefeller, Henry M. Flagler, Samuel Andrews, Stephen V. Harkness and William Rockefeller. A photostat of the charter is published as the frontispiece of this issue. The charter is that under which the Standard Oil Co. of Ohio is operating today. Only the clause stating the authorized capitalization has been amended.

The charter with petroleum spelled petrolium, follows:

"Know all men by these presents that we John D. Rockefeller, Henry M. Flagler, Samuel Andrews, and Stephen V. Harkness of Cleveland, Cuyahoga County, Ohio, and William Rockefeller of the city county and state of New York have associated ourselves together under the provisions of the Act of the Legislature of the State of Ohio, entitled an act to provide for the creation and regulation of incorporated companies in the State of Ohio passed May 1, 1852, and the acts supplementary thereto passed April 8, 1856, and the act to amend the last named act passed February 14, 1861, and other Laws of the State of Ohio applicable thereto for the purpose of forming a body corporate for manufacturing Petrolium and dealing in Petrolium and its products under the corporate name of the Standard Oil Company.

"And we do certify that the purpose for which said body corporate is formed is the manufacture of Petrolium and to deal in Petrolium and its products.

"That the capital stock necessary for said company and the amount agreed on as composing the capital stock is the sum of one million Dollars.

"That the amount of each share of capital stock is one hundred Dollars.

"That the name of the place where said manufacturing establishment shall be located is Cleveland City, Cuyahoga County, State of Ohio.

"That the name and style by which said manufacturing establishment shall be known, is The Standard Oil Company.

"Cleveland, Ohio, January 10, 1870

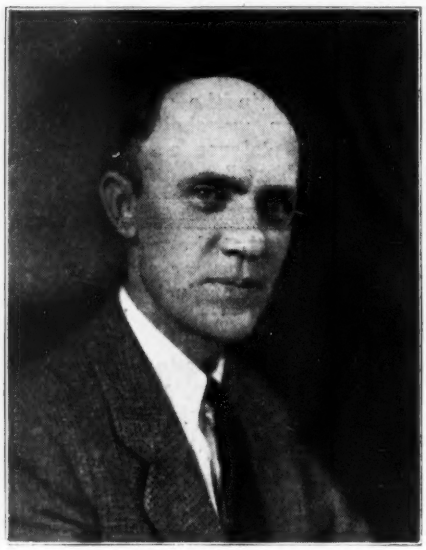
JOHN D. ROCKEFELLER
HENRY M. FLAGLER
SAMUEL ANDREWS
STEPHEN V. HARKNESS
WILLIAM ROCKEFELLER"

"Cuyahoga County } SS.
"The State of Ohio }

"At Cleveland in said county this 10th day of January, 1870, personally appeared before me the undersigned as Justice of the Peace in and for said county John D. Rockefeller, Henry M. Flagler, Stephen V. Harkness and William Rockefeller signers and sealers of the foregoing instrument and acknowledged the signing, sealing and execution thereof to be their free act and deed.

"In witness whereof I have hereunto set my name officially at Cleveland in the said county this 10th day of January, A.D. 1870.

FREDK. A. BRAND
Justice of the Peace



Burt Bay

Bay Is General Manager Of Mo.-Kans. Gasline

KANSAS CITY, July 12.—Burt Bay became general manager of the Missouri-Kansas Pipe Line Co., July 1, resigning the general superintendency of the gas division of the Empire Gas & Fuel Co. at Bartlesville, Okla. His headquarters will be in Kansas City.

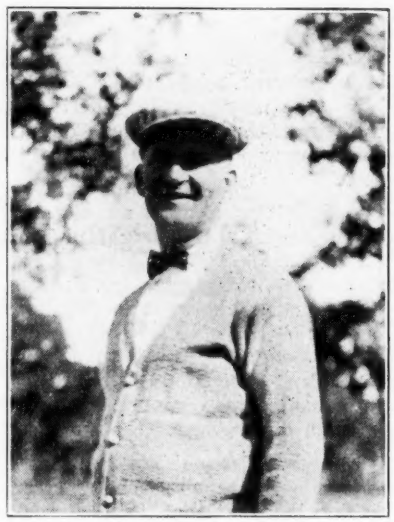
Mr. Bay will serve chiefly as operating manager in direct charge of the company's interests in Kansas, Missouri and Kentucky, his experience having been confined principally to the gas production business for more than 21 years. In May, 1908, Mr. Bay became a machinist in the compressor station of the Columbus, Ohio Natural Gas Co., the company later forming the Medina Gas & Fuel Co., and the Berea Pipe Line Co., in Ohio. In 1913 Mr. Bay participated in the negotiations when the Cities Service Co. purchased the three companies. When active operation was taken over by Cities Service in 1915, he was placed in charge of all compressor stations. In 1917 he was transferred to Bartlesville to work for the Empire group as superintendent of all compressor stations and main line oil pumping stations. Three years later he was promoted to the general superintendency of the gas division.

Price Cut of Pennsylvania Grade Crude Oil

(By Telegraph)

OIL CITY, July 16.—Joseph Seep Purchasing Agency July 16 reduced prices of Pennsylvania grade crude 25 cents, except Macksburg, O. district crude in Buckeye lines which was cut 35 cents. New prices are:

Bradford-Alleghany district crude in New York Transit and National Transit lines, and other Pennsylvania in National Transit lines, $3.75 for oil run prior to July 1; for oil run on July 1 and after, $3.80. Other Pennsylvania in Southwest Pennsylvania Pipelines, $3.75. Pennsylvania grade in West Virginia in Eureka Pipelines, $3.65. Macksburg, O. district in Buckeye lines, $3.50 per barrel.



John F. O'Donoho

Heads Producing Group In Texas Division

HOUSTON, July 13.—John F. O'Donoho, head of the Petroleum Producers Co., Wichita Falls, is serving his second term as president of the Texas division, Mid-Continent Oil & Gas Association. He is the second president that organization has ever had.

J. D. Collett of the Fort Worth producing firm of O'Keefe & Collett was the first. Friends of Mr. O'Donoho are predicting for him successive re-elections such as Mr. Collett experienced for years. His name will come up again at the annual meeting.

Supply of Pennsylvania Grade Crude Oil To Increase in Coming Years

PITTSBURGH, July 12

PRODUCTION of Pennsylvania grade crude oil is steadily increasing and the supply will continue to increase for some years in the future, because of improved methods of recovering oil that was held in the sands after ordinary producing methods had failed to dislodge it.

These facts were brought out at the annual meeting of the Pennsylvania Grade Crude Oil Association here July 8, by John P. Herrick, Olean, N. Y., producer and a director in the association, and by R. J. Alexander, the association's secretary.

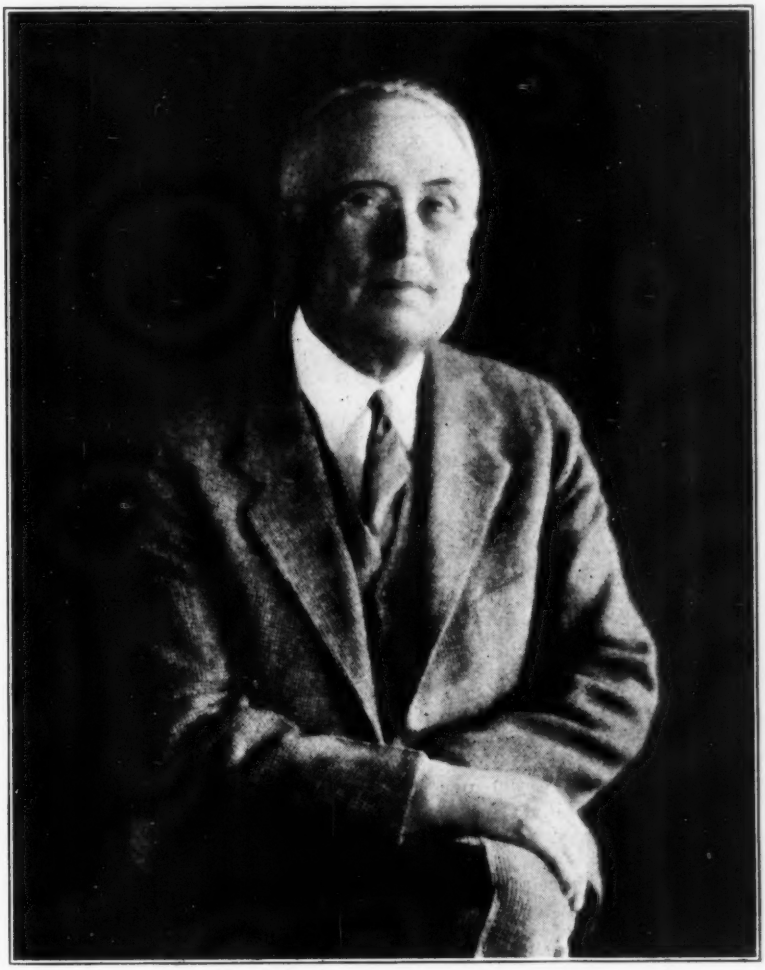
Mr. Alexander said that, in 1928, 20,008,000 barrels of Pennsylvania grade oil were produced, an average of 57,558 barrels a day. Mr. Herrick in a discussion of the crude oil supply in Pennsylvania and other fields said the present recovery of Pennsylvania oil is exceeding 60,000 barrels a day.

The present production of the McKean County field of light Pennsylvania crude, is approximately 21,000 barrels a day, Mr. Alexander said, whereas the field's average for the first six months of this year was only 19,000 barrels a day, the average for the last quarter of 1928, 17,750 barrels a day and the average for 1927 approximately 16,200 barrels a day.

Mr. Herrick predicted a steady increase in Pennsylvania crude production over the next few years. In his discussion of the crude supply and the market for Pennsylvania automobile and airplane oils, he said:

"Distributors of 100 per cent Pennsylvania grade lubricants say that one of the sales resistance statements they are frequently faced with is that the supply of Pennsylvania grade crude oil is small in quantity, gradually decreasing and within a few years will have ceased entirely. So it seems to me that at this annual meeting of the Pennsylvania Grade Crude Oil Association, it is a good time and a good place to check up the facts so that the producer, refiner, distributor and consumer may know as far as it is humanly possible to know what the coming years have in store in the way of a reserve of the highest grade oil in the world.

"The Pennsylvania grade oil area extends from Allegany county in New York state to the Kentucky line, embracing western Pennsylvania, West Virginia and eastern Ohio. There are today more than 120,000 wells producing Pennsylvania grade oil. The present daily production exceeds 60,000 barrels and is steadily increasing, owing to the development of new and improved methods of recovery.



John P. Herrick
New York producer and director, Pennsylvania Grade Crude Oil Association

"During the past 10 years the work of restoring pressure to the oil sands either by water, gas or compressed air has been going on steadily. At first the methods were crude but each year sees improvement and within the past two years more progress has been made than in the previous 10 years. All indications point to the recovery, under the new methods, of hundreds of millions of barrels of oil that could never have been recovered at a profit under the old order of producing.

"Many of the wells on Pennsylvania and New York state leases have been producing oil for half a century. The smartest of the 'rock hounds,' as the field men term the geologists, tell us that up to date not more than 25 per cent of the oil has been recovered from the sands of the Pennsylvania grade area. This means that 75 per cent of the original oil content of the sands is still in the earth.

"In some of the richest of the small areas that are producing under the new methods, a recovery of several thousand barrels per acre has been recorded. In one area water pressure works best, in another gas, in another compressed air.

"The geologist until a few years ago was considered a joke by the old fashioned oil producer. But today no important oil company would think for a moment of making any investment in development work without the advice of a competent geological staff. And under the new order of development the geologist is as

welcome as the flowers of spring in the Pennsylvania grade oil fields.

"Personally I am very optimistic on the future of the Pennsylvania grade oil fields, and firmly believe that the oil sands of the Appalachian region will be producing oil in commercial quantities 60 years hence and that the production will steadily increase for at least 15 years, perhaps longer, adding hundreds of millions of dollars to the wealth of the eastern oil fields.

"IF IMPROVEMENTS are made in methods of recovery in the next 10 years to compare with those of the past few years, a longer life and greater oil recovery per acre may be anticipated. In fact I believe the time will come when the shallow oil sands of this area will be mined. Oil mining is not new in Europe and is now being carried on very successfully in France where operation is profitable on a dark oil, not to be compared in any way in refining value with Pennsylvania sand oil.

"From 25 to 30 per cent of all the motor and aircraft oil marketed on the Pacific Coast is manufactured from Pennsylvania grade crude oil and shipped in tank cars from the Pennsylvania and West Virginia refineries. The freight averages 9 cents a gallon. This is more than 2500 miles from the wells that produce the oil. There are today more than 10,000 dealers west of the Rocky Mountains who handle 100 per cent Pennsylvania grade oil. Of the more than 150 Ford dealers in southern California, all but two specify and recommend a 100 per cent Pennsylvania oil marketed through a large Cleveland firm and refined at Warren, Pa.

"One of the largest distributors of Pennsylvania lubricants on the Pacific Coast has recently purchased a controlling interest in a modern refinery in Pennsylvania to be assured of a supply of motor and aircraft oil. Within a few days the Pennzoil Co. of Oil City, Pa., secured the contract to supply the Transcontinental Airways, the Lindbergh line, with motor oil for the motors of its big coast to coast passenger air fleet.

"Many of the historical air flights of history have been made with Pennsylvania aircraft oil and as the great new market for dependable lubricants will be in the air, Pennsylvania refiners are modernizing their plants where needed and getting ready to meet the increasing demand.

"Competition is keen in the motor oil markets of the country. In some western states oils are marketed as 'eastern' that were produced west of the Mississippi river. Even in far off Switzerland, where the trademark of the Pennsylvania Grade Crude Oil Association is registered, a dealer imitated the trademark in order to sell a poor European substitute in place of Pennsylvania grade motor oil.

R. J. Alexander
Secretary, Pennsylvania Grade Crude Oil Association

"My personal desire is to see the crude oil production of the Pennsylvania fields conserved through improved production methods so that the last possible barrel of this oil of superior lubricating content may be extracted from the sands. This coupled with modern refining methods will mean that the wealth that is hidden in the sands will be brought to the surface gradually, making for stabilized value of producing properties, refineries, pipe lines and distributing facilities, as well as prosperity for the cities and towns in the oil regions and an assured market for the manufacturer of oil well supplies.

"PENNSYLVANIA lubricants are a quality product and entitled to be marketed at a quality price. Compared to the total production of the United States, the production of Pennsylvania grade oil totals only a few per cent of the whole. The lubricants are peculiarly adapted for motor cars and aircraft. My thought is that the producer, refiner, transporter and distributor are each entitled to a fair profit. And the consumer is entitled to a quality product at a reasonable price, with an assured supply, sold and guaranteed to be made from 100 per cent Pennsylvania grade crude oil. This is an ideal worth striving for.

"Once or twice a year the newspapers carry an interview that sends the chills down the spine of the motorist. In this interview it is stated as a positive opinion that the oil supply of the United States is on the wane and that there is only from five to seven years supply in sight. In London two years ago the owner of an oil magazine told me that my optimistic opinion about the future oil supply of the United States did not agree with those of his oil editor and in his opinion securities of the big oil companies of the United States were not entitled to rate as investments. For more than 20 years I published an oil region newspaper and the oil exhaustion interview is an old story to me. I have heard it too often.

"EXHAUSTION of the oil resources of Pennsylvania, California, Texas, Wyoming, Oklahoma, Kansas, New Mexico and other oil producing states is far off. Oil is today being produced from sands that lie more than 8000 feet below the surface. Hundreds of wells are in operation today at a depth of 6000 and 7000 feet.

"Within 10 years, perhaps earlier, oil wells 10,000 feet in depth will excite no curiosity. And when the oil sand wells of the United States are exhausted there is a last reserve of billions of barrels of oil to be released from the great shale mountains of Colorado, Wyoming and Utah, where this great wealth is securely locked up until it is needed and can be marketed at a profit."

Mr. Alexander reported the association has 632 refiner and marketer members and more than 700 producer members. Field men are working to increase the number of producer members. Producers, he pointed out, had benefited greatly from a stabilized market brought about by the association's advertising of Pennsylvania grade oil.

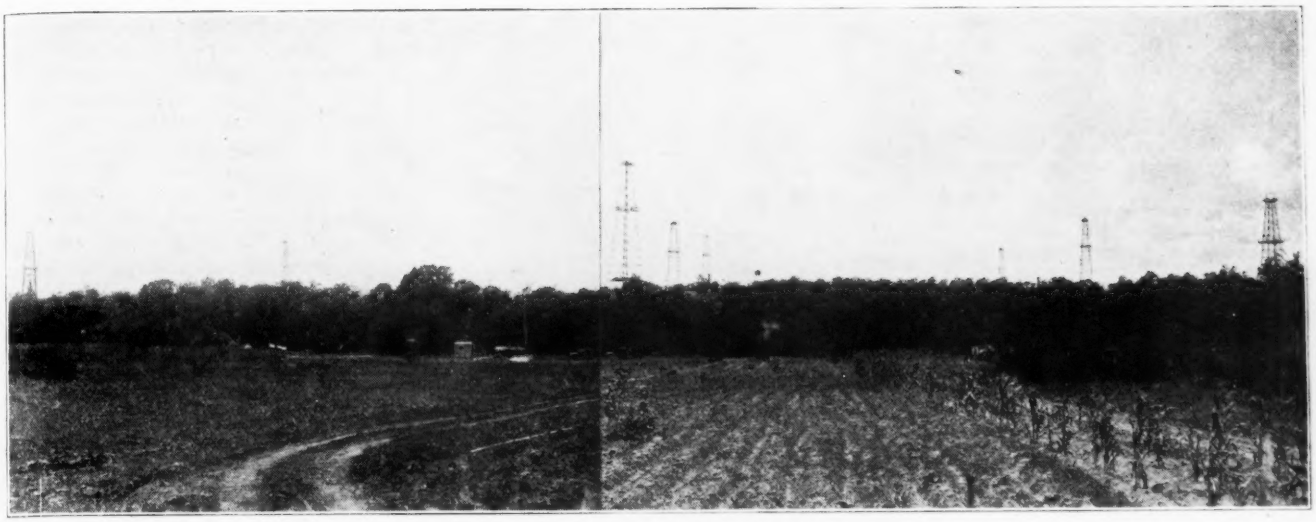
The association's advertising will shortly tell the public the story of the bonding of refiners, distributors and dealers of Pennsylvania grade oil as a guard against mixing of other oils with the Pennsylvania product, Mr. Alexander announced. Bonding was undertaken a year ago.

If refiners, compounders, brokers, jobbers and large retailers engaged in the manufacture and distribution of Pennsylvania oils do not take out a bond, their franchise to use the association's emblem is to be terminated, he said.

The association also plans to spend more money this year in policing oils sold under its emblem although the market has been well cleaned up in this respect, Mr. Alexander said. The emblem is registered in many foreign countries as well as in the United States and so far the association has been successful in prosecuting cases of alleged infringement, he said.

Dr. Gerald L. Wendt, assistant to the president, Pennsylvania State Col-

(*Continued on Page* 38)



Looking westward toward the Sasakwa field

Sasakwa Oil Field Starts Its Boom With 40 New Operations

By John Power
N. P. N. STAFF WRITER

SASAKWA, July 13

THRUSTING above the scrub timbers and stone outcrops which cover the hills of the southeastern tip of Seminole county rise the derricks of Oklahoma's newest oil field, Sasakwa.

Slipping quietly through the infant stages of one-well discovery and subsequent offsetting through which most fields pass, the new pool is already in its adolescence, with seven wells making better than 13,000 barrels daily from the Wilcox sand, covering an area of more than a mile running southwest from the southeastern quarter of 7-6N-8E, to the center of 13-6N-7E.*

The traveler down the section line road three miles east of Spaulding, Okla., comes suddenly on a hurry and bustle uncommon in the heretofore quiet hills. On the steep side hill to his right stands the derrick of the farthest east well of the pool, tall against the sky because of its hillside location. At the foot of the hill, beside an almost invisible stream, stands a boiler, its steam feeding a small, hastily erected pipe line pump through which the Shell Petroleum Corp. sends its own 1700 barrels daily production in the district, as well as some 1600 barrels of the Sinclair's through the Shell Pipe Line Co. four-inch line to its Wewoka station.

A quarter mile farther west, and a quarter south of the Shell's well is the Sinclair's No. 3 Davis, the first big Wilcox sand well in the pool. Standing in an almost circular hollow, from which the heat waves rise in slow eddies, the well goes quietly about its business, flowing naturally 3000 barrels of high gravity oil per day.

The Sinclair's Davis lease, covering the west half of the southeast quarter of Sec. 7, has a daily production of about 7500 barrels from the four wells now producing. Of these, but three are in the Wilcox, the No. 1 being a Wilcox failure, plugged back to the Simpson, from which it is now making about 290 barrels daily.

The Sinclair's No. 1 Davis, in the NW SW SE of 7-6-8, is one of the oddities which occur in most fields. Offset north and south by excellent Wilcox sand wells, the No. 1 is a failure in the same formation. It did, however, serve to start the drilling campaign which culminated in the completion of so many Wilcox sand wells at the same time in what had been considered wildcat territory.

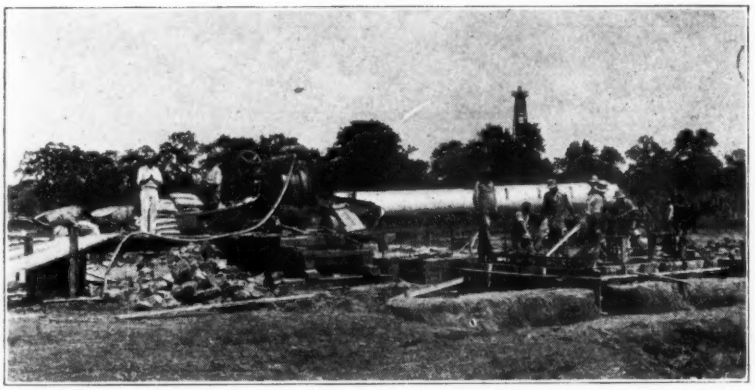
When plugged back to the Simpson, (4097-4187) it started off making close to 1000 barrels daily from that and the Viola formations. By virtue of its failure in the Wilcox, it must, however, share discovery honors with the No. 3 well, south offset to the No. 1, as the former was the first to encounter the Wilcox oil which gives the field its importance.

The present activity is not the first oil exploration in the site of the new pool. As far back as 1927 the Carter Oil Co. drilled its No. 1 Phillips, NW NE NW of 18-6-8, to the Wilcox for a hole full of water at a depth of 4180 feet. The well, a quarter mile due west of the Prairie Oil & Gas Co. No. 1 Patton, farthest south producer of the group of wells in 6N-8E, was plugged back to the Simpson at 3969. It is still producing in that formation, making some 55 barrels daily, after starting off with an initial production of 180 barrels per day.

About a year later two more wells were completed as shallow producers in the area, both west half a mile of the present production. Carter drilled its No. 1 Spillman, SE SW SW of 7-6-8, a diagonal northwest offset to its No. 1 Phillips, to a total depth of 2995 feet. After being shot at 2880-90, the well was put on production, having an initial of 75 barrels daily, and a present production of 15 barrels per day. The oil is believed to be coming from the Boggy shale.

At about the same time that the Carter was completing its second well, the Twin State Oil Co. made a Cromwell sand producer in its test in the SE SW NW of 7-6-8, half a mile north of the Carter's No. 1 Spillman, and about three eighths northwest of the present Wilcox production. After a light shot at 3175-3220, the well started off pumping some 75 barrels per day. It is now in the process of being deepened to the Wilcox, and is

*See NATIONAL PETROLEUM NEWS, page 45, July 10 issue.



Pouring concrete for the Sinclair's gas lift station now building in the Sasakwa field

one of the most closely watched drilling wells in the field.

Barring of course the discovery wells, perhaps the most important producing well in the field so far is the No. 1 Bond of the Signal Oil Co. in the SW NE of 13-6-7, about a mile southwest of the other Wilcox wells in the area. Making 1000 barrels daily from but a scant foot in the pay, the well holds forth much in the way of promise for an areal extent of importance.

Between this well and the main body of the present field is the Carter's Wilcox dry hole in the NW NE NW of 18-6-8, but the latter may turn out to be another Sinclair No. 1 Davis, with the offsetting locations good. Or, the dry hole may indicate a barrier between the area of the discovery wells and the Signal producer, in which event the latter may be considered as the opener of another or extension pool.

In this connection, a wildcat being drilled in the SE NW of 9-6-7 by the Gypsy Oil Co. is apparently done for, killing off the prospects to some extent to the westward, though its distance of three and a half miles from the pool leaves plenty of room for expansion of the present productive area. The well picked up the Viola at 4112, and filled up 500 feet with water at a total depth of 4197.

So far, Sinclair, Shell, Prairie, and Signal have the only Wilcox producers of the field. All of the wells were started at about the same time on the strength of the 1000 barrels per day the Sinclair was getting from its No. 1 Davis. Prairie Oil & Gas Co. has the farthest south well of the immediate group around the discovery, its No. 1 Patton making some 3000 barrels daily from the Wilcox. To care for the oil now being produced the Sinclair has a four-inch line running from the field to the Sinclair Pipe Line Co.'s main line between Allen and Henryetta. Prairie Pipe Line Co. is putting in a station and a six-inch line to tie into the main trunk line four miles east, through which it can pump the oil either through to Henryetta or to Maud.

The wells make around 4,000,000 cubic feet of gas per day along with the oil. To utilize this gas, and at the same time build up the production as much as possible, the Sinclair is building a six-unit compressor station on the east line of its Davis lease. The equipment, which is being brought from dismantled stations no longer needed in other parts of the Seminole area, consists of six 170-horsepower Cooper compressors. Inter and after coolers, Braun type, are being installed. The plant, which is in fact a compression gasoline plant with gas lifting as a side issue, will run on gas from the wells, returning the residue to the wells for production purposes.

Fuel and water are so far less of a problem in the field than is often the case in new pools, particularly at this time of year. The Independent Natural Gas Co. (formerly the Tri-County Gas Co., subsidiary of the Independent Oil & Gas Co.) has a four-inch gas line serving the field with gas from the Healdton and south Little River fields. The Carter had a water line laid to the area from its Little River pumping station from which the Sinclair got water for its first wells. Now, however, the Sinclair has purchased a lake about two miles south of Little River which has some half million barrels of water in it, a supply deemed ample for the time being at least. With the exceptionally rainy spring through which the country has passed, the water situation is not as serious as it sometimes is. Rumor has it that it was an overwrought oil field superintendent who once answered the question of "When did it rain last?" with the classic reply, "Well, it clouded up once in July, but it hasn't rained since last April."

About 40 locations are active in the area surrounding the present production. Of these, some dozen or more are already drilling, with the material ordered, or rigs built, for most of the others.

The Holdenville and Seminole conglomerates outcrop in the area. The hills, though low, are steep, and for the most part, heavily timbered with black jacks and scrub oak, although the soil does not appear particularly rich or fertile. The drilling of the wells presents no problems not already overcome in the other Seminole areas. The same equipment and methods developed during the earlier drilling campaigns are in evidence in the new field of Sasakwa. No Hunton lime or Sylvan shale has been encountered in the wells so far drilled, the tools passing out of the Woodford into the Viola lime. In some wells there has been found a little Sylvan detrital material (a reworked conglomerate at the base of the Sylvan shale) but this is not uniform throughout the field. Structural conditions on top of the Simpson have so far been fairly normal, the producing wells picking it up at about the same subsurface level. Geologically, no satisfactory explanation for the failure of the No. 1 Davis of the Sinclair to produce in the Wilcox has so far been offered.

E. L. Halloway, Sinclair's division superintendent, and Emmet Dougherty, general superintendent, pose for N. P. N.'s camera

Kettleman Hills Operating Agreement Submitted

By Jack N. Westsmith
N. P. N. STAFF WRITER

THE proposed operating agreement for both the North and South Domes of Kettleman Hills, in the interests of conservation, has been submitted to interested parties and will be considered at a general meeting July 17.

This agreement, together with a report, was prepared by the special committee of fee owners, lessors, lessees, and others after a conference with Dr. George Otis Smith, director of the U. S. Geological Survey.

The agreement provides for general deferment of drilling until July 1, 1931, except that wells now drilling and those required to be drilled to validate permits, where such permits are not subject to extension of time, may carry forward to point of discovery, or to top of the oil sand.

In the agreement, it is provided that unless there is a market for new production in California, or unless the area controlled by the parties to the agreement is threatened by drainage, production from the North dome will be postponed until July 1, 1931. However, recognition is given certain wells offsetting the Milham Exploration Co.'s discovery well, the object being to make it possible to bring this well under control by lowering the pressure, after which the offsetting wells will be shut in.

In consideration of this general compliance with the government's request for deferring development and postponing production, the Secretary of the Interior is to be asked to perfect the titles to certain permits on future discoveries and discovery already made and to approve the assignments pending. The Secretary is also asked to grant all necessary extensions for outstanding permits within the area in question.

The agreement proposed for operators and owners interested in the South dome of Kettleman Hills is similar to that agreed to in May, under which the operators agreed to shut down drilling until January 1, 1931. Ohio Oil Co. will be permitted to continue its well on the South dome to discovery, after which it is provided that it will be shut in. This well is the only drilling well on this dome.

Dr. George Otis Smith in an interview stated that the draft of the agreement, as reported by the committee, includes what the administration desires in the matter. He added that the government has no desire to withhold a definite lease.

One of these leases, the Armstrong permit, reached discovery on July 11, and Dr. Smith stated that he thought that the well would probably be killed, as the Shell Oil Co. is in full accord with the government's policy. Discovery on the Armstrong permit leaves only four to earn their titles on the North dome. These are the Beal, Crum or Kennedy, Ferguson, and Watson, with possibly one other.

Dr. Smith did not regard the report of the committee that will be presented July 17 as a compromise, but rather as serving the government's policy of postponing production through a practical shut down for two years, and at the same time preserving all equities of the permittees and operating companies.

He stated, although not essential to the agreement, but as a suggestion of possible larger outcome of the present negotiations that provisions are made in the agreement for the appointment of a representative committee that will later consider the practicability of a plan of unit development for Kettleman Hills.

Parties interested in the Kettleman Hills district are by no means in accord as to the desirability of the government's program. Some of them doubt whether they can safely comply with the government's requests. They question whether some future administration might not declare that the legal requirements of the lease have not been complied with, though the present administration may have sanctioned the action, or even demanded it.

Other operators say that public utilities and other oil companies are parties to the contracts that have been made and that the interests of these outsiders must be considered in any tentative drilling program. That is, where natural gas, natural gasoline, or oil have been sold under contract certain obligations have been incurred.

Tulsa's Changing Skyline

TULSA, July 13.—Considerable business building activity has been going on in Tulsa the past two or three months. Oil companies are contributing their share.

The picture below was taken from the roof of the World building in which is located the NATIONAL PETROLEUM NEWS office. The steel work in the foreground is a portion of the addition to the Skelly Oil Co. building at Fourth street and Boulder avenue. The Skelly building when completed will be nine stories high, five stories being added at present.

The steelwork in the background is a part of the addition to the Mid-Continent building, which after December 1 will be the Thompson building. The majority of the new space will be occupied by the Transcontinental Oil Co.

Between the Thompson building and the large white building at the left of the picture is seen the concrete work for the new building being erected by Waite Phillips. This new building is across the street from the Philtower, the top of which is seen above the white building. The Philtower also was built by Waite Phillips who is chairman of the board of the Independent Oil & Gas Co.

Gray County, Texas, Getting the Play In New Panhandle Drilling

By Lawrence E. Smith
N. P. N. STAFF WRITER

AMARILLO, July 13

THE Panhandle of Texas is in the midst of its biggest campaign since the days when the Borger district was feverishly alive and operators in a dozen counties were wildcatting in all directions.

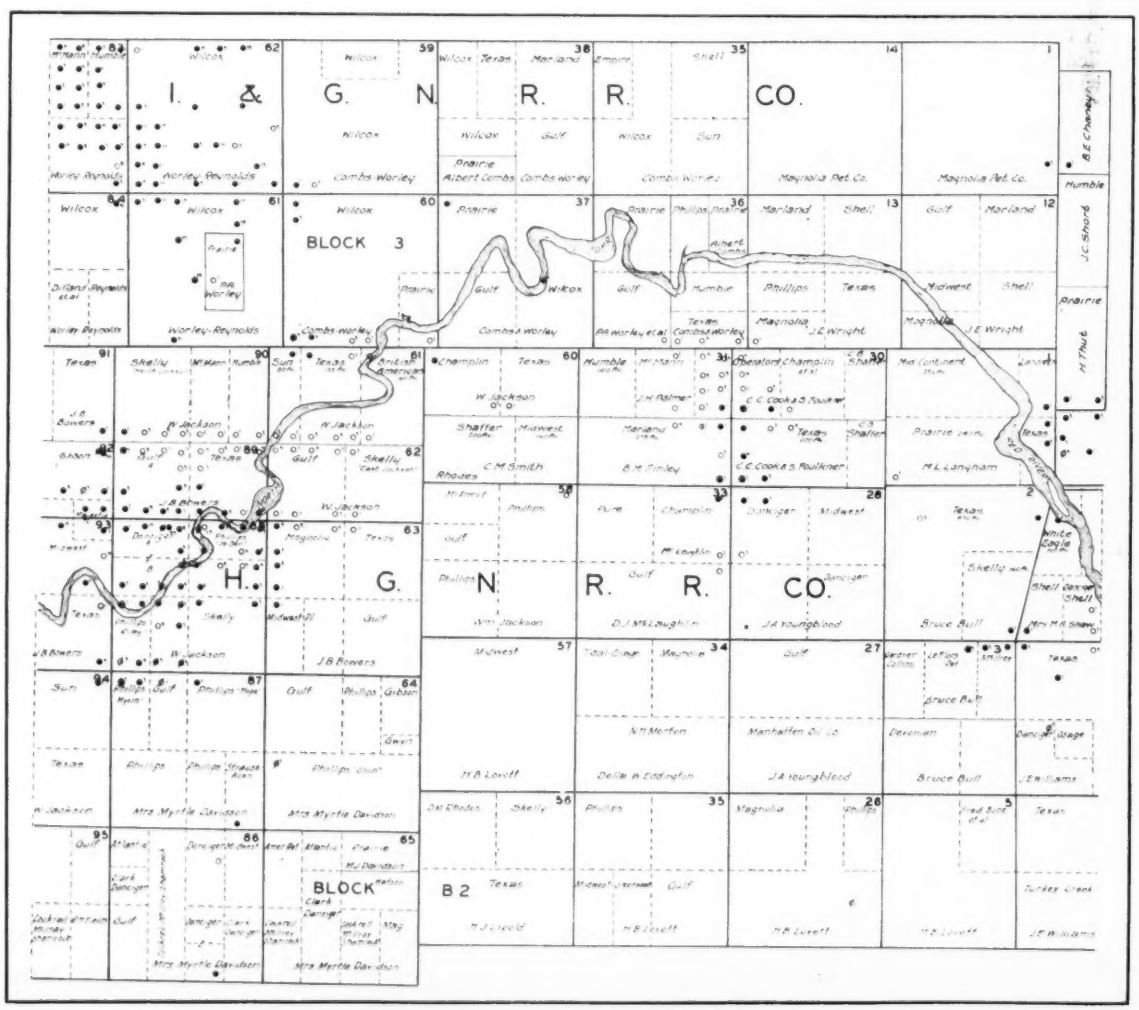
Of the present boom—for around Pampa it is evident that it is a boom—the "hot" play is in Gray county and the greater part in two pools thereof, the Bowers and the Finley-Brown, west of the little town of LeFors.

So rapidly have things moved along and so successful has the drilling been that total production in Gray county has moved up from 21,000 barrels the first of the year to 57,800 as of July 11 and it has doubled since April. Of the present total, the two most active pools contributed 37,100 barrels as of July 12.

There is the possibility, say some operators, that a congestion in the Bowers and Finley-Brown pools will develop within 60 days. Others contend that present available storage in the Panhandle will take care of the situation nicely, although a bunching of big wells of the caliber of several recent completions might result in the present pipe lines being unable to handle all the oil for a few days.

Some of the completions have been quite large. The No. 7 well drilled by the Operators Oil Co. in Block B-2, Sec. 88, H. & G. N. Survey, gauged 14,500 barrels as its peak production, pay being found at 2955-60 feet. This is on the property purchased by Phillips Petroleum Co. and now operated by the purchaser. Magnolia Petroleum Co.'s east offset to the big one made 9700 barrels as its peak; The Texas Co. had one in Sec. 89 that made 8150 barrels and several others have shown initial output almost as imposing.

Within these two pools, which, as shown on an accompanying map, do not cover a great deal of territory, there are around 80 active rigs, locations and drilling wells—within the pools or immediately adjacent. The county has a total of 124 operations. The campaign is a quick one, as most



Part of Gray County, Texas Panhandle, showing Bowers and Finley-Brown pools

Part of the Bowers Pool, Gray county, Texas

of the operations are rotary, and with completion depths of less than 3000 feet, rapid time is made. The peak production of the two pools probably will be hit before Sept. 1 and, barring the completion of some test which opens much more territory, the peak should be reached by the middle of August.

As to the possibility of a congestion, it would be no more than a local one, as the pipe line capacity out of the district is between 110,000 and 120,000 barrels daily and four operated refineries in the district handle some 20,000 barrels daily currently. Empty steel tankage in the district totals about 8,000,000 barrels, with some 16½ million barrels filled. While a considerable amount of the empty tankage is owned by companies who are not oil purchasers, if the need developed it doubtless could be leased or purchased by the oil buying companies.

For the Bowers and Finley-Brown pool production is pretty certain not to be neglected by the buyers. Of A.P.I. gravity around 42 degrees and better, and practically sulfur free—in marked contrast to the earlier Borger pool production—it classifies as "sweet" oil and meets with high favor on the part of the refiner. It commands a price at the well of $1.60 for the 42-42.9 degree bracket, which is 15 cents more than the Borger field crude of the same gravity brings and 15 cents less than the Mid-Continent price for the same grade.

Operators are somewhat critical of the prices paid for the Gray county production, contending that the Panhandle generally has suffered from the black eye given by the Borger pool, whose oil carried considerable sulfur.

The two most active areas in Gray county have been built up to their present interesting stage over a long time. A widespread leasing play in the county and in all others in the trend along the flank of the buried mountain range running northwest and southeast occurred several years ago. Among companies which took a fancy to Gray county was The Texas Co. whose acquisition of the then cheap acreage resulted in its present position of holding an enormous spread in the now "hot" areas, as well as far in advance of them in all directions. Currently, it has better than 15,000 barrels daily in Gray county, some of which is to the east of the town of LeFors and it has an average of better than 300 barrels per well.

Gray county attracted its first attention right after the Borger boom was well under way back in 1926, when the Wilcox Oil & Gas Co. made its discovery some two miles north of the present center of activity in the Bowers pool. Both the Bowers and the Finley-Brown pools were logical offshoots from the Wilcox pool, although definitely separated from it.

The future of the area is somewhat difficult to figure, since it is quite "spotty" as to the caliber of the wells. An occasional big one will come in along with a number of medium wells, of the 250-500 barrel class, in the same week. However, with all wells in Gray county at this time averaging around 145 barrels, lumping the settled and the flush ones, it is seen that 80 drilling wells, nearly all of which should produce, will keep the production trend of the field on the upgrade for some weeks.

The Texas Co., owing to its large room in which to operate, is leading in the Gray county development. In the entire county, this company has 35 operations under way at this week end. Gulf Production Co. is second with 13; Phillips is third with 12. Skelly Oil Co. is drilling five; Operators Oil Co., which turned a highly prolific lease to Phillips Petroleum Co. a month ago for a reported price of $1,200,000, of which $400,000 was cash and the rest in Phillips stock, is drilling five wells. Danciger Oil & Refining Co., which held a quarter interest in the property bought by Phillips, is developing other holdings, having seven operations going now. McMan Oil & Gas Co. is drilling five wells. The rest of the drilling operations are in ones, twos and threes for each company engaged. These figures, as stated, apply to Gray county and not merely to the two pools now most active.

Looking ahead it is easy to visualize a long run of development in Gray county after the present active spots have been outlined and drilled up. Over east of the town of LeFors, enough drilling has been done over a wide area to occasion much further development. A number of the wells in that partially proved field make 200 barrels and better each day. The most of the acreage is held by the same people who have their hands rather full in Bowers and Finley-Brown.

From the standpoint of the overall economics of the industry, the Gray county development is not threatening. Conservative operators assert that the Panhandle, as a whole, may reach 100,000 barrels per day or possibly 110,000. That would mean a gain from its current production of some 20,000 barrels to reach the higher figure and nearly all of this would have to come from Gray county as other districts are practically stationary. That much of a gain might

Production by Companies in Bowers and Finley-Brown Pools, Block B-2, H. & G. N. Survey, Gray County, Texas

Bowers Pool

Company	Lease	Sec.	Wells July 4	Prod. July 4	Wells July 12	Prod. July 12	Pipe Line	Company
Danciger	Jackson	88	10	675	10	765	Pampa	Danciger
Gibson	Bowers	92	4	164	4	156	Bell	Gibson
Gulf	Bowers	89	7	3063	7	2546	Gulf	Gulf
Gulf	Jackson	62	1	451	1	302	Gulf	Gulf
Magnolia	Bowers	63	4	1060	4	832	Magnolia	Magnolia
Phillips	Jackson	88	4	126	4	139	Prairie	Phillips
Phillips	Joe Dan	88	5	9440	5	9921	Prairie	Phillips
Skelly	W. Jackson	88	2	97	2	20	Humble	Skelly
Skelly	N. Jackson	90	1	19	1	92	Humble	Skelly
Sun	Purviance	61	1	365	1	209	Humble	Sun
Texas	Bowers	89, 91, 93	6	8262	7	8399	Texas	Texas
Texas	Patton	61	..	....	1	218	Texas	Texas
Midwest	Bowers-A	63	1	26	1	92	Prairie	Midwest
Midwest	Bowers-B	93	1	27	1	23	Prairie	Midwest
Triplehorn	Bowers	92, 93	4	102	3	162	Bell	Triplehorn
Total			51	23,877	52	23,876		

Finley-Brown Pool

Champlin	McLaughlin	33	1	295	1	355	Prairie	Champlin
Champlin	Faulkner	60	1	24	1	122	Prairie	Champlin
Danciger	Powell	28	1	1808	1	1647	Humble	Danciger
Marland	Finley-Brown	32	2	1096	3	1529	Pampa	Marland
McIlroy	Bull	3	2	30	2	30	Bell	McIlroy
Phillips	Palmer	31	1	928	3	2347	Prairie	Phillips
Texas	Bull	2	1	854	2	764	Texas	Texas
Texas	Faulkner	29	..	....	2	1932	Texas	Texas
Operators	Cook-Faulkner	30	1	1761	3	4500	Texas	Operators
Total			10	6,796	18	13,226		

result in the temporary congestion some predict.

It is always to be borne in mind that any such calculations may be severely upset either way. A bunching of big wells of the caliber that have been drilled would bring on that congestion in a hurry. The granite wash pay of this region is full of surprises and an occasional unaccountable happening, such as was experienced by the Midwest Exploration Co. the past week.

Midwest's No. 1 Bowers, NW SW of Sec. 63, on the south fringe of the Bowers pool, had been completed some time ago as a small well and its decline had brought it down to around 25 barrels daily. A crew was sent in to cleanout last week. As nearly as could be figured, the hole had 60 feet of cavings in it. At about five feet off bottom the well started to flow, finally reaching 102 barrels per hour. Any explanation is pure conjecture, as the well was not deepened, was not, in fact, cleaned out to its original total depth.

Judge Germany, 59, Dead at Dallas

HOUSTON, July 13.—Funeral services for Julius A. Germany, 59, widely known oil man and lawyer, were held at Dallas, July 12. Mr. Germany had died after a month's illness. He was stricken at a homecoming banquet of his class at Southwestern University, Georgetown. Recovering sufficiently to be moved, he returned to Dallas where he suffered a second attack.

Julius A. Germany

Judge Germany, as he was widely known in the petroleum industry, was at various times connected with the Lone Star Gas Co., Magnolia Petroleum Co., and Panhandle Refining Co. After resigning as vice president and general counsel of the Panhandle, six years ago, he was senior member of the Dallas law firm of Germany & Runge.

At Austin, where the legislature is in special session, the senate adopted the following resolution:

"The senate has learned with profound regret, of the death at his home in Dallas of Julius A. Germany, well known to the members of this body and highly esteemed as a lawyer and a citizen and cherished as a sincere friend by all of them. In his passing the state has suffered the loss of a useful citizen, the bar an honored member and the cause of good government a dependable friend."

New Producing Methods Of Penna. Crude

(*Continued from Page* 32)

lege, detailed the opportunity for petroleum research work provided in a recent appropriation of $50,000 by the Pennsylvania legislature. The research work is to be done at State College under Dr. Wendt's direction.

W. L. Franks, Logan, O., secretary of the Southeastern Ohio Oil and Gas Producers Association, praised the cooperative efforts of the association and told how the advertising campaign had brought about wider distribution of Pennsylvania oils.

Gus J. Steigerwald, Steigerwald Petroleum Co., Cleveland, praised the Pennsylvania product and urged that such a premium crude be manufactured only into lubricating oils of the highest quality.

Directors elected are: Clayton G. Dorn and I. H. Shearer, Bradford Pa.; E. C. Breene, Charles L. Suhr and Samuel Messer, Oil City, Pa.; John P. Flynn, Sistersville, W. Va.; E. M. Lyons, Philadelphia; John A. Beck, Karns City, Pa.; Fred G. Clark, Cleveland; J. D. Dinsmoor, St. Marys, W. Va.; D. M. Wilson, Columbus, O.; A. D. Hufford, Bremen, O.; John P. Herrick, Olean, N. Y.; David B. McCalmont, Franklin, Pa., and H. D. Atha, Logan, O.

Review of Late Production News

ANOTHER week of mounting production. The country's total output reached another new high of 2,891,750 barrels the week ended July 13, according to the American Petroleum Institute. This exceeds by 34,350 barrels the previous week's output which also produced a record output.

Crude imports the past week rose 10,429 barrels, to 301,000 barrels daily average. Total new crude supply also went to the new height of 3,192,750 barrels, compared with new supply of 3,147,971 barrels the previous week.

The largest change for the week was in Pecos county, West Texas where output gained nearly 18,000 barrels daily average.

St. Louis pool in Oklahoma fell off 4200 barrels while Oklahoma City pool gained 2450 barrels.

California gained but 4000 barrels the past week.

California

CALIFORNIA daily average production was increased to more than 890,000 barrels for week ended July 13 by several large completions from the O'Connell zone at Santa Fe Springs, and through the belated opening of wells, in the upper zones, that had been shut in under the abandoned proration program.

Maricopa Flats and Kettleman Hills areas drew attention from the coastal region by the completion of three wells in an area that had been considered by many geologists to be out of the picture. The discovery of two wells in the Maricopa district comes as a result of development in that area by the Signal Oil & Gas Co.

Shell Oil Co. completed its Armstrong No. 1 at Kettleman Hills for about 300 barrels of 62 gravity oil from a depth of 6556 feet. The well is being killed to deepen to a lower horizon, with a hope of securing greater production of oil and gas, the latter was flowing from the well at the rate of 12,000,000 cubic feet as compared to 91,000,000 cubic feet per day that the Milham Exploration Co.'s Elliott No. 1 is making.

Milham's Elliott No. 2 is reported to be on the verge of completion. General Petroleum Corp.'s Ochsner No. 2 will be drilled deeper, side tracking some drill pipe that has evaded all fishing attempts.

Possibility of obtaining commercial production from a number of drilling wells in the Santa Barbara Mesa field is rapidly growing less and less although developments within the coming week may change the outlook materially. Work has been delayed on Lincoln Drilling Co.'s Williams well in the Summerland district while electric pump is being installed. The well will be put on the pump because of lack of kick to the producing sand at a depth of 1256 feet.

Current production in this country by pools is found on page 121.

Practically all drilling operations have ceased at Lawndale and many operators have announced their intention to abandon their wells.

Texas, New Mexico, Louisiana

INTEREST turned from West Texas to New Mexico in the week's operations affecting the Permian salt basin region of sulfur crude production. Principal attention was being paid the No. 1 Meyers well of Cranfill & Reynolds, Inc., in 22-24S-36E, and The Texas Co.'s No. 1 Sheppard, 6-26S-37E.

The Meyers was carrying about 2000 feet of oil in the hole at 3305 feet, surface elevation 3343 feet. At 3325 feet, it was making small heads when the tools were taken out of the hole. The well is southeast of The Texas Co.'s Lynch, in 34-20S-34E, which recently has been producing slightly less than 1200 barrels daily.

No. 1 Sheppard of The Texas Co., previously reported completed in telegraphic advices appearing in the July 10 issue of NATIONAL PETROLEUM NEWS, was holding above 1500 barrels daily production at the end of the week. Total depth is 3300 feet.

The Sheppard completion is nearly 30 miles southeast of the Meyers and Lynch wells in the Lea county area of general exploratory work.

Operations were of local interest only elsewhere in New Mexico, Texas and Louisiana.

Oklahoma-Kansas

NEW pools and extensions to old ones continued to swell the production from the general Seminole area, keeping the daily output close to the 400,000 barrels per day mark.

Of the new areas, the Sasakwa pool in the southeastern tip of the Seminole county is looked upon by some as one of the most important. Nearly 40 locations are active, with more than a mile of proven territory to work on. A dry hole completed during the week offsetting did not condemn much territory, as it offset another well, which although dry on the Wilcox is offset north and south by good production in the same sand.

No new oil wells were added in the Oklahoma City pool, while the deepest well in the pool is apparently a failure. It is the Mid-Kansas No. 2 Fortson, south offset to the No. 1 which is the best well in the field, and has production to the south and east, so that its failure so far to produce does not condemn any large area or direction. Present depth is 6536.

Kansas passed a particularly quiet week. The chat well of the McPherson-Shell interests in 1-20S-2W started to make a little water.

Wyoming, Montana

KEVIN-SUNBURST field's deep test in northern Montana has a big showing of gas at 4555 feet and, some free oil. Development of production in the deep sands in Kevin-Sunburst would mean much to that field. Another new field was indicated in Montana last week by the announcement of discovery of crude oil in the wildcat well on Flatwillow structure, near Winnett, central part of the state.

Continental Oil company's discovery deep well in the San Juan Basin, northwestern New Mexico, is increasing its production steadily, and is now capable of 850 barrels of crude per day. As the oil production grows larger, the water becomes less, and upon the complete exhaustion of the water, the well is to be drilled in. Test is 6771 feet deep and is the only producing well in the Pennsylvanian sand in the Rocky Mountain states.

New Showings in New Mexico Along Lime Ridge

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, July 12

DISAPPOINTMENT of operators in results of southeastern New Mexico wildcatting is slowly fading.

Faced with plenteous reserve supplies of crude in the Permian salt basin geological province they were not necessarily impatient at delay in actual production, but they wanted assurance that the oil they believed to exist in Lea county, New Mexico, was there for a certainty.

Completions and oil showings in drilling wells have tended to establish in the last ten days, the future worth of the exploratory area along the subsurface lime ridge extending northerly from the previously flush area of Winkler county, Texas, into Lea county.

Two of the currently most important wells of the region are the No. 1 Meyers of Cranfill & Reynolds, Inc., in 22-24S-36E, and the No. 1 Sheppard of The Texas Co., in 6-26S-37E.[1]

The Sheppard, which came in the night of July 6, making estimated production of 70 barrels an hour, was holding above 1500 barrels daily throughout its first week of productivity.

No. 1 Meyers, almost 30 miles northwest of the Sheppard, but only a short distance from The Texas Co.'s good Lynch well,[2] in 34-20S-34E, was carrying 2000 feet of oil in the hole below 3300 feet in an uncompleted stage.

The Meyers, which has surface elevation of 3340 feet, had 2000 feet of oil in the hole at 3305 feet. On drilling to 3325 feet it made small heads of oil when the tools were removed from the hole. At 3345 feet, it was drilling in lime and estimated good for 15 barrels daily.

Northwest of the Meyers across the township line, the Lynch well is producing nearly 1200 barrels daily. East of it about eight miles, the Empire Gas & Fuel Co.'s B-1 State test, in 8-21S-35E, made 85 barrels initial production about a year ago.

Various operations in all directions from the Lynch and Meyers wells are either at incompleted drilling stages or, in a few cases, they represent abandonments.

The Sheppard completion is in the northwestern part of the same township where The Texas Co. drilled the discovery well of southeastern Lea county about three years ago. Parenthetically, it should be mentioned that Maljamar Oil Co., developing the Baish permit, in 21-17S-32E, drilled the first producing well in Lea county, in 1926, but that completion is upwards of 50 miles northwest of the Rhodes.

It was the Rhodes well, at completion depth below 3200 feet, that first called attention to the northerly extension of the sub-surface lime ridge from Winkler county, Texas, into New Mexico. Thereafter, came the drilling of many high pressure gas wells and a number of tests showing oil in small quantities.

The Skelly Oil Co.'s Joyner, 26-25S-36E, and the Cranfill & Reynolds No. 1 Wilson, 23-25S-36E, were subsequent oil completions. They tested, respectively, 810 and 156 barrels daily maximums. Both were better producing wells than the Rhodes, which was rated at 120 barrels, initial maximum, yielding a light gravity distillate bled off its gas at the casinghead.

Operators and geologists are finding borne out slowly their original beliefs in the productive character of the southeastern Lea county structure, which probably will not produce continuously along its narrow trend but will be separated by "saddle" conditions in the lime.

Eventually, The Texas Co. will look to Lea county for a large part of the controlled production it expects to move through its recently completed West Texas-to-the Gulf pipeline system, rated at 50,000 barrels daily capacity. That line was put in operation July 1, starting with about 7250 barrels daily moved from West Texas. A short lateral from Winkler county, Texas, connects the main system with Lea county production.

Figures compiled from monthly statements of the Winkler county prorating committee show that the Texas area under its jurisdiction has produced 90,058,183 barrels in the three years since discovery. The bulk of the recovery total was in the last two years.

Average Winkler recovery has been 5300 barrels an acre, considering as the field limits the lines bounding all producing leaseholds in the total area. On such a basis the total Winkler area consists of 16,992 acres.

Considering only the 40-acre prorating units productive on each lease, which is a more accurate appraisal of actually proved ground, the total area is trimmed to 10,840 acres. On the basis of such figures the average Winkler recovery is brought up to 8307 barrels an acre.

Included in the computation are the Leck, Scarborough and O'Brien divisions of the general Winkler area. Their elimination, in order to show recoveries of the original Hendricks main development, gives another interesting computation.

Average recovery of the Hendricks area segregated from the others mentioned, has been nearly 9000 barrels an acre from 249 prorating units covering 9960 acres.

Maximum recoveries credited to individual operators were attained by the partnership of the Murchison Oil Co. and the Cranfill Bros. Oil Co., on their five-acre "H" lease in Sec. 33, Block 26. It was put on production in June of last year, yielding 146,677 barrels per acre average to July 1, 1929.

[1] NATIONAL PETROLEUM NEWS, page 33, July 10, 1929.

[2] See map and article page 37, June 26, 1929 issue NATIONAL PETROLEUM NEWS.

Must Get Permit to Sell Gasoline in Texas

By Telegraph
HOUSTON, July 15

Texas motorists were to begin paying a 4 cent gasoline tax July 15. Governor Moody took steps July 13 to that end when he announced the new law would be filed with the secretary of state Monday and the emergency clause would be invoked.

* * *

Wholesale distributors of taxable motor fuel in Texas are faced with taking out a permit and providing surety bond for performance of provisions of the new four-cents a gallon occupation tax law recently enacted by the legislature.

The bill, which is now awaiting Governor Moody's signature, calls for an amount of bond ranging from $1000 to $100,000, dependent upon the quantity of taxable gasoline handled by the distributor. Amount of the bond is to be fixed by the comptroller.

The new law exempts gasoline used in farm tractors, motor boats, airplanes or for purposes other than in motor vehicles used on highways. Dealers may deduct for physical losses.

Provision is made in the law for fines of $100 to $500 and six months imprisonment, or both, should sales be made without fulfilling permit requirements.

The law provides that every person required to pay the tax shall keep a complete record of all sales in a permanently bound book, or books, (not loose-leaf). Such records are to be kept open at all times to official inspection.

Hu. M. Harris

Engineer Invents Oil Drilling Equipment

HOUSTON, July 12.—Hu. M. Harris, recently appointed chief mechanical engineer of Humble Oil & Refining Co., Houston, was for many years connected with the Lucey Manufacturing Corp., at Chattanooga, first as field engineer and later chief engineer. He is a patentee of a number of types of oil field drilling equipment and has been actively engaged in American Petroleum Institute standardization work since its inception.

After his graduation from Purdue in 1902, Mr. Harris was successively general superintendent of the Southern Engineering & Boiler Works, Jackson, Tenn.; general manager of the Jackson City waterworks; and Commissioner of Public Utilities at Jackson.

Boykin Company Sold To International

HOUSTON, July 11.—Sale of the Boykin Machinery & Supply Co., to the International Derrick & Equipment Co. is announced from Beaumont headquarters of the first mentioned. Consideration was reported at $450,000.

President B. Boykin and Secretary E. L. Boykin will continue with the company in executive positions. M. Guiterman and I. R. Bordages, stockholders of the Boykin, sold their interest and will retire from the business.

The Boykin Machinery & Supply Co. manufactures the "Greyhound" line of rotary drilling equipment.

Handling Pipe in Seminole Discussed by Engineers

By John Power
N. P. N. STAFF WRITER

SEMINOLE, July 13

THE proper handling of pipe in the Seminole field was the chief topic of discussion at the regular monthly meeting July 9 of the Seminole chapter of the American Petroleum Institute Division of Development and Production Engineering.

A. D. Johnson, Amerada Petroleum Corp. foreman in the northern Seminole area, was the chief speaker of the evening. Herbert Schaffer, Pure Oil Co., and chairman of the chapter, presided over the meeting.

The Amerada, said Mr. Johnson, has been using the A.P.I. standard 10 thread pipe in the 5 3/16-inch, 6⅝-inch and 8¼-inch sizes. A Texas pattern casing shoe, spot welded in three or four places, and used in conjunction with the Baker cement shoe, was the standard equipment on pipe run in the hole.

In re-running used pipe, the most important point was the proper inspection of each joint. Salvaged pipe in his territory, he said, was inspected when brought to the gathering yard from the abandoned well. A mandrel was run through it, and imperfect joints were either discarded or repaired, according to their condition.

The Amerada does not use linecut pipe in wells, said Mr. Johnson, although some of the foremen present said that linecut joints were frequently run on the bottom of mixed strings of old and new pipe in the wells under their supervision.

A careful tally is kept of the pipe run in the hole. In this way an accurate check of depths at any time is possible. The pipe is run through either Butler or Bovaird spiders, used in conjunction with the elevators manufactured by these companies, Mr. Johnson said.

The full weight of the pipe is not set down on bottom, but is partially swung to allow the cement to pass easily behind the pipe. The Amerada, said Mr. Johnson, uses some 400 sacks of cement with the 8-inch set in the Seminole field. Of this amount about 75 per cent is ordinary cement, and the remainder either "Encore" or "OK" Superfine. The use of accelerators is not considered necessary except in special instances where it is desired to get in the hole as soon as possible after the cementing job.

The 5 3/16-inch and 6⅝-inch pipe is roped in, but all 8¼-inch is started with the tongs to make sure that it is not cross threaded. In this connection it was brought out that drilling contractors should run the casing with the casing crew, instead of the rotary crew, as the former, being more experienced in handling the pipe, were less apt to "jim" the threads than the regular drilling crew.

An expert stabber was necessary, in the opinion of many of the field men, to insure that the joints were properly started.

The practice of roping pipe, although it was undoubtedly faster than tonging, was likely to cause cross threading, unless great care was taken to start the joints properly. This is especially true, it was said, of the 8¼-inch, the smaller sizes being less apt to give trouble from this source. One company representative did not allow any of the 8¼-inch to be roped, but required that all of it be tonged.

The subject of pipe recovery from abandoned wells came up during the discussion following Mr. Johnson's talk. An average over the field showed but 1500 feet of 8¼-inch recovered, though it was not thought that the cement came up this far behind the pipe. It was considered customary to run the rippers in the pipe until the vibration point was reached, and then to rip the pipe and try to come out.

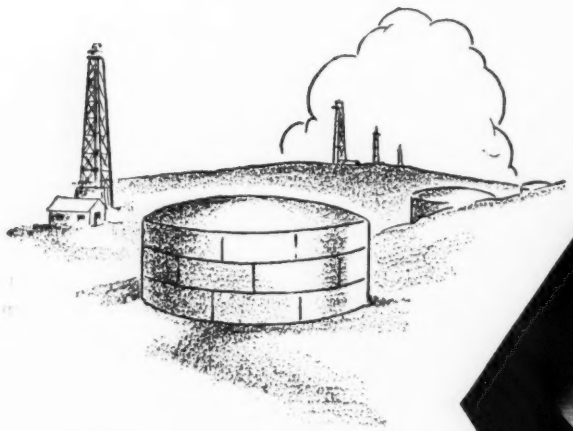
The low average recovery of pipe set was attributed more to sharp sand caving behind the pipe than to any grip the cement might have on the string, as in many instances no trace of the cement on the bottom of the pipe recovered was noticed. Some companies merely shoot the pipe loose at whatever point it is thought the string can be started, repeating the process farther up the hole in the event that the casing will not come.

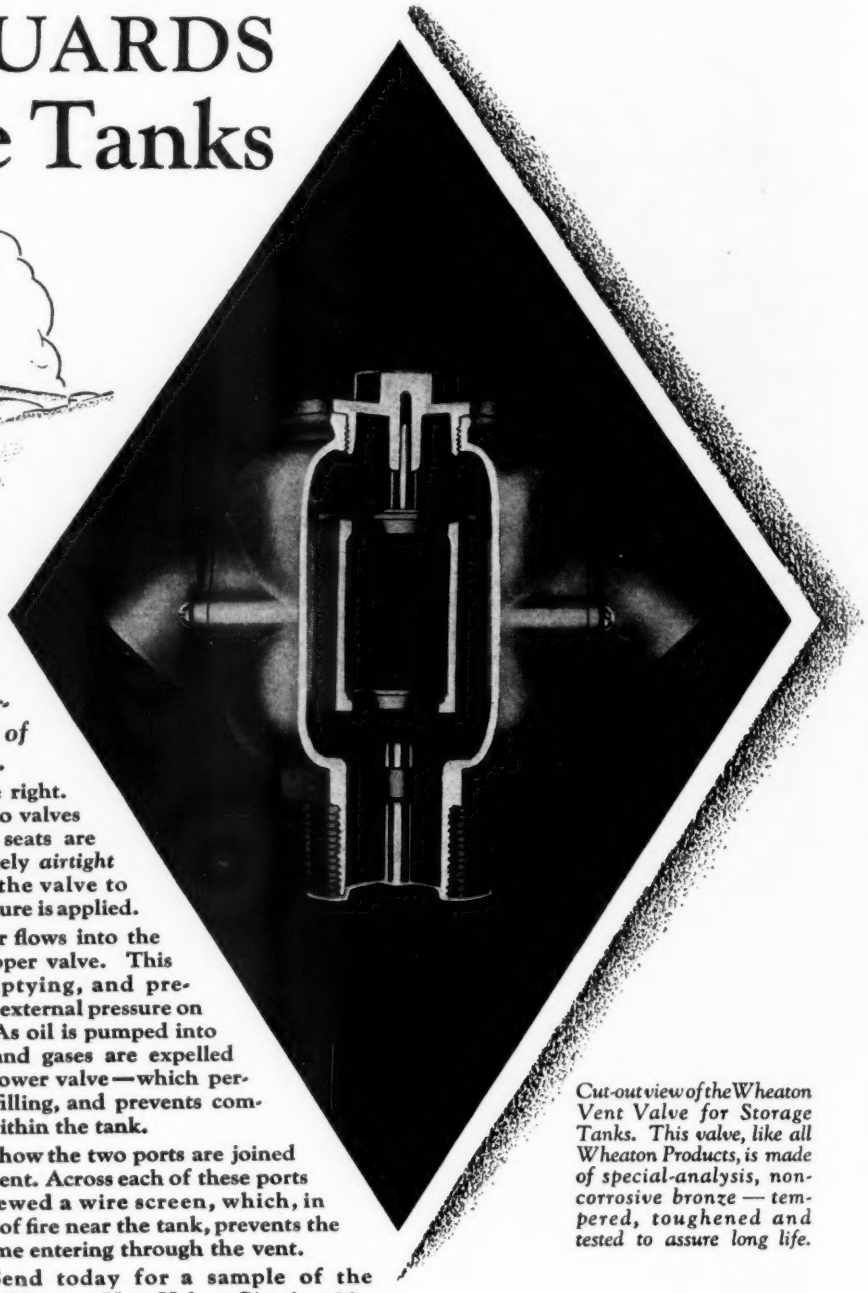
At the next meeting, scheduled for August 13 the subject will be "Producing in the Seminole Field by the Combination Flowing and Pumping Methods."

Virginia Wildcat Drilling

RICHMOND, Va., July 13.—A wildcat test is being drilled on the Phillips farm near the Matthews courthouse, Matthews Co., Virginia, by the Davis Elkins interests of West Virginia. The Arkansas Drilling Co. has the contract to drill to 3500 feet. It now is drilling at about 1000 feet.

Read how *perfectly* this vent valve SAFEGUARDS Storage Tanks





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The Wheaton Vent Valve for Storage Tanks provides the *perfect admission and expulsion of air*—essential to real *safety.*

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As oil is drawn off, air flows into the tank through the upper valve. This permits quick emptying, and prevents vacuum and external pressure on the tank walls. As oil is pumped into the tank, air and gases are expelled through the lower valve—which permits quick filling, and prevents compression within the tank.

Observe how the two ports are joined to the vent. Across each of these ports is screwed a wire screen, which, in case of fire near the tank, prevents the flame entering through the vent.

Send today for a sample of the Wheaton Vent Valve. Give it a 30 or 60 days' test. If you are not entirely satisfied, return it for credit or refund.

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The Editors' Viewpoint

National Petroleum News

Will the Gas Tax Commit Suicide?

"Is the gasoline tax starting to commit suicide?"

W. S. Booton, a state tax official from Tennessee, suggests this question for discussion at the coming North American Gasoline Tax Conference in Detroit, Aug. 7, 8 and 9. This conference is made up principally of the state oil inspectors and other officials having to do with the collection of the gasoline tax.

With more foresightedness than one is accustomed to look for when state officials think and talk about tax matters, Mr. Booton goes on to say that the gasoline tax will "swell up and bust wide open" within three years after it becomes unpopular.

With two states, South Carolina and Florida now having in effect a six-cent-a-gallon tax, and with a tax of some amount now introduced in every state of the union, it would be well indeed were the coming gas tax conference to confine its discussion to the public's attitude towards this particular form of taxation.

Every form of taxation is considered to be unpopular. The gasoline tax may be said to be almost the exception to that rule, and for several reasons. It is a direct tax, paid supposedly by those who could best afford to pay it, the proceeds going to make more enjoyable and more profitable the tax payer's ownership of a motor vehicle.

The cost of collection is very low indeed, as costs of collecting other forms of taxes go. It started in ten years ago, in Oregon, with the amount of the tax very low. The automobile people and the oil industry were in favor of the tax when it started.

But what has happened in these ten years? For one thing the number of people owning automobiles has increased enormously. The motor vehicle has changed our ways of living to the extent that ownership of a car is no longer optional to most of us, but a necessity.

For another thing the amount of the gasoline tax has shot steadily up, from one cent to two cents, then to three and four. Now eight states have a five-cent tax and two a six-cent tax. In 1928 over $300,000,000 was collected from the public in gasoline taxes and this year it is estimated that the amount will exceed $400,000,000. This is an average of about $15 per year for the average car owner, far higher than the average income tax paid to the government.

Then another change has come about which in time will affect the public's mind towards the gasoline tax. The highways are becoming more and more public carriers. The average motorist who uses the roads in his passenger car has to fight more and more for his rights with speeding busses, with trucks and motor convoys using the road, which he is paying a tax to keep up, for purely commercial purposes.

Those trucks and busses pay more in gasoline taxes than the car of the average motorist, of course, and they pay in addition regular license fees to the state.

But if the roads are to become common carrier lines should not the states collect more in taxes from those concerns which use them for this purpose and less, in the future, from the average motorist who drives a light passenger car, whose wear on the road cannot come anywhere near that of the trucks and busses?

Then again, $400,000,000 is a lot of money to spend wisely and constructively in the course of a year. It will build a tremendous lot of new road in a year and repair and improve a great amount of old road. This amount of money means an average of close to $10,000,000 for each state, and this does not include the money the United States government puts into building roads every year and what is paid for a good share of the paving in towns and cities.

There is a question which the public will decide for itself some day, in connection with the gasoline tax, as to whether this amount of revenue from that tax, is not all that the states can spend wisely; is not all that it is necessary to spend to keep up with the growth and spreading out of population and the increasing number of cars coming into use.

Some time there is going to be brought out the amount of revenue from the state gasoline taxes that actually goes into the building and improvement of roads.

The public would be greatly surprised today if it knew the proportion of the tax that is diverted to other purposes, sometimes by the state, more often by the local communities to which a share of the proceeds of the tax are turned over, in the case of many states.

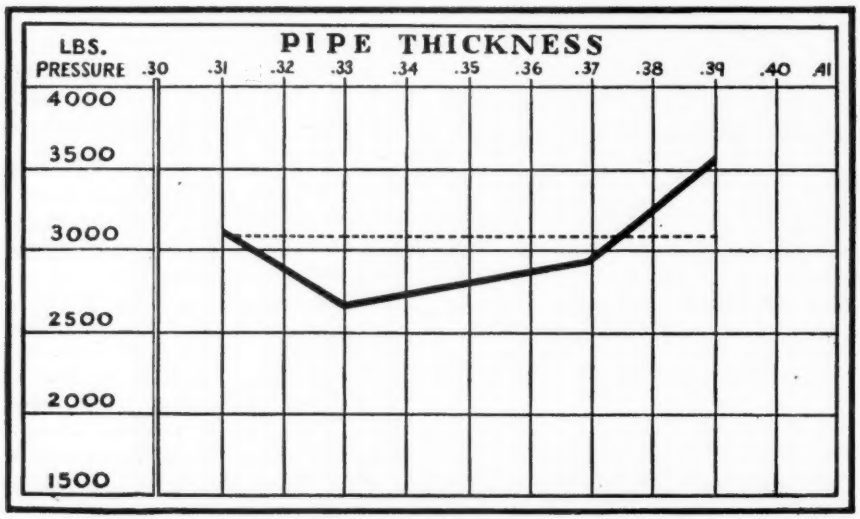
So far no one has asked—at least loudly enough to be heard over the country—when the demand came up for an increase in the tax, for an accounting to find out just how wisely what had previously been collected had been spent. But someone is going to ask before long, —and demand an answer—when five and six-cent gasoline taxes are universal.

So NATIONAL PETROLEUM NEWS is glad that Mr. Booton, of Tennessee is going to bring up this question of whether the gasoline tax will commit suicide. It hopes there be considerable thought given to this matter at the Detroit conference, instead of those attending spending their time trying to see if inspection of lubricating oils, or some other petroleum product, cannot be taken over by the state inspection departments. It will follow and publish with interest what these state inspectors and gasoline tax officials have to say on this matter.—V. B. G.

*deLavaud pipe shows

an average internal resistance

of 3090 lbs. per square inch



* The above graph is based on tests performed by a well-known Testing Laboratory. These tests show that deLavaud Pipe is over 25% stronger than good pit cast pipe. The dotted line represents the average bursting pressure of 6" deLavaud pipe of representative thicknesses.

THE superior strength of deLavaud pipe becomes more surprising when one considers the increased carrying capacity which this pipe offers. On the graph shown above, you will note that the average thickness of the deLavaud pipe tested is thirty-five one-hundredths of an inch. Yet, this pipe exceeds by 25% the strength of any pit cast pipe designed for equal working pressures.

deLavaud pipe is made by pouring molten metal into a cylindrical mould which is revolving at a high rate of speed. Centrifugal force holds the metal against the mould and drives out impurities *with a force 40 times greater than gravity.*

Therefore, deLavaud cast iron has a dense close-grained structure and freedom from gas bubbles and impurities. In addition, the quick cooling of the surface metal in the deLavaud water-cooled mould helps bring about the finely divided condition of the graphite in the iron.

So remarkable have been the results of strength tests conducted on deLavaud Pipe that it is difficult to describe them without using extravagant-sounding comparisons. Suffice it to say that the great strength of deLavaud has never been equalled by any pit cast pipe.

Cast iron pipe made by this Company bears the "Q-check" trademark of The Cast Iron Pipe Research Association.

Let us send you further facts and figures about deLavaud Pipe. Our free, illustrated handbook gives detailed information regarding types of joints and dimension tables. Write for your copy today.

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AFTER listening to the testimony at the state corporation commission's hearing in Oklahoma City last week, relative to wastage of gas by the Sinclair Oil & Gas Co., one feels quite sympathetic with that commission. The spectacle of better than 60 million feet of gas going into the air is a deplorable one. Likewise, the spectacle of a company having around $120,000 invested in the offending well, which is paying its way by virtue of the 1,700 barrels of oil it produces along with this gas, is also noteworthy. One can see that the defendant has a side to the case also.

As an abstract proposition, no gas should be wasted. It should either be used commercially—and profitably—or it should be returned to the sand to aid in the recovery of oil. But there is no market for the gas at Oklahoma City and the field is not yet developed to the point where gas can be returned to the sand with assurance that it will be worth doing.

The commission has not ruled on the case yet, although it will soon. It has to consider, along with the question of violation of state laws, the rights of other operators in the field and the injury that they may be suffering. If it could render a Solomon's judgment—take the sword and divide the child—everybody would be happy. But, if it rules at all, one side must lose the argument. And, although the commissioners asked several operators on the stand what they would do, it got very little assistance.

* * *

This same Oklahoma City hearing developed a little comedy. When R. A. Griffith, president of the Sinclair O. & G. was on the stand, he was questioned closely by Attorney Ratliff of the commission as to his familiarity with the state laws governing waste of gas.

"Do you know," asked Mr. Ratliff, "that violation of the gas wastage law calls for a fine not to exceed $5,000 for each day the waste occurs?" Mr. Griffith said he knew it.

"Do you know that it also provides for a jail sentence?"

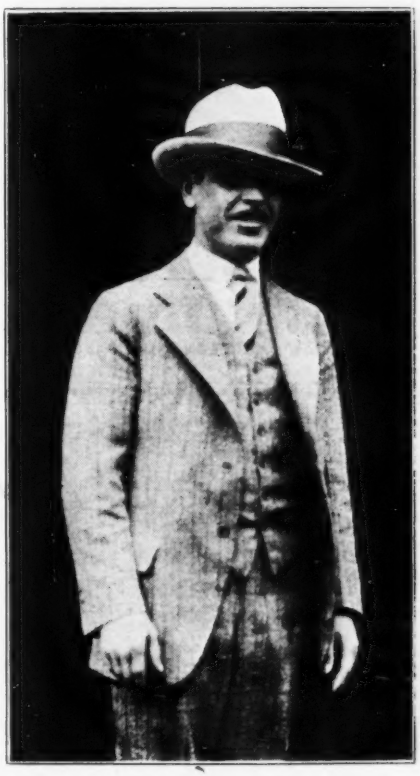
"Lord, no, I didn't know that," Mr. Griffith replied.

Some more confusion was caused by the introduction of a new formation name. The pay from which the big gas is coming from the Sinclair well in question lies above the big oil pay in the field. It has been called in recent weeks the "detrital zone." Attorney Bell, of the Sinclair, was questioning a witness.

"Now you say, Mr. ..... that this trietal zone . . ." Here he was interrupted by the laughter of the spectators.

* * *

A trip to Amarillo this week revealed quite a change in that city. On the occasion of our last visits, several months ago, we came away feeling a bit depressed. Business seemed to be at quite a low ebb. Now there is an air of prosperity about the place, reflected in considerable new building, both office and residence. The revival is due to several things. The greatly increased oil field activity which came about with the May price advance, has helped mightily. There is a bumper wheat crop in this part of the Panhandle—thousands of bushels of newly threshed wheat are piled on the ground in the small towns between Amarillo and Pampa, waiting for freight cars—and the cattlemen are doing well.



One of the youngest of general superintendents of production in the Mid-Continent is Robert A. Bonnell, of the Tidal Oil Co., headquarters in Tulsa

Pampa, the center of oil activity in the Gray county boom, is all a-bustle—more business than it has had before in three years. It is impossible to find a place to stay all night most nights and those wishful of doing so end up by getting in their cars and driving to some small town or clear back to Amarillo. In only one respect is the Schneider Hotel taking care of all comers. It is still serving the best meals to be had anywhere in the Panhandle and we will almost go so far as to say in the state of Texas.

An old-timer whom everybody in the Mid-Continent knows is now spending much of his time at Pampa. That is "Uncle Bob" Dunlope. One-time state treasurer of Oklahoma, hailing from Ponca City, he still knows his way around in politics. He gets in on many of the oil booms and he has some acreage in Gray county that he thinks of quite highly.

* * *

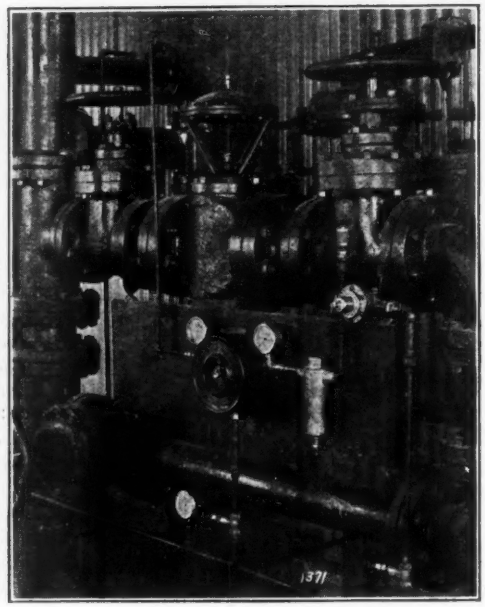
The federal land bank of Wichita, which along with others of its kind was brought into being by act of Congress three years ago, is horning in on the oil business. According to the *Wichita Eagle*, John Fields, president of the bank, says that no more loans will be made to land owners who have disposed of any part of their royalties. "The applicant," says Mr. Fields, "must offer all mineral rights with the surface as security for a loan."

He goes on to justify this by saying that when an oil boom occurs, delinquencies occur in the area, and payments cannot be made on the loans. He graciously says that the bank has no objection to an oil and gas lease but royalties, never.

There is much moonshine in the bank's attitude and the policy is like unto that of many other federal government departments—a zealous at-

Tycos Back Pressure Regulator

(*Pilot Operated*)



THE Tycos Back Pressure Regulator is a pilot operated controller, operating either by compressed air or gas. The control pressure works directly against the diaphragm and the instrument proper. This in return operates the pilot valve to release or transmit the necessary motive pressure for opening and closing the control valve.

Whereas with ordinary self-acting type of regulator, a pressure change of several pounds may be necessary to operate the controller, the Tycos Regulator affords that immediate, sensitive, and positive response to the slightest fraction of pressure change in the system under control.

Tycos Pressure Regulators can be changed from the back pressure controller to the reducing pressure regulator, by the simple exchange of pilot valves in the instrument proper. Likewise a change from a higher pressure to a lower pressure controller, or vice versa, can be made by an exchange of diaphragms in the instrument itself, where the control valve itself is suitable for different pressure operations.

Write for Tycos Catalog Part 1700 which is devoted entirely to the application of Tycos instruments in the oil industry.

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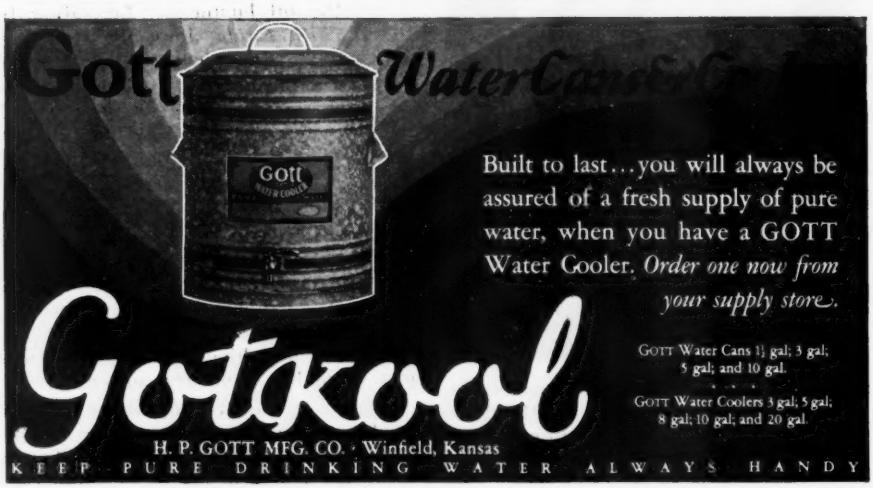
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tempt to regulate every phase of human conduct. The federal land banks were not created to speculate in oil and gas futures. There loans are based upon the surface values of the farms and are nowhere near the price the farms would command. If an oil boom occurs in a region where the bank has loans, the fortunate farmers who share in the proceeds have the money to pay their loans and the others go on farming. No farmer disposes of all his royalty in the present state of enlightenment. The part he retains is usually great enough to give him a substantial return if his farm is worth while as an oil producer and if it isn't, the location of the well which condemned it is quickly restored to cultivation.

* * *

Died: Charles Willard, 56 years old, lease superintendent at Bristow, Okla., for the Selby Oil & Gas Co., from being struck on the head by a thread-protector which fell from a derrick. His widow and two sons survive.

* * *

Colin C. Rae is now geologist in charge of the Oklahoma district for the Skelly Oil Co. Several weeks ago we announced that Mr. Rae was to become oil and gas supervisor for the state of Michigan. That was true at the time and how could we tell that he would change his mind and stay with the Skelly?

* * *

Ten Years Ago

(From NATIONAL PETROLEUM NEWS, July 16, 1919)

Texas railroad, commission orders suspension of production and delay in completing wells for five day period in Northwest Extension pool, Burkburnett district. Overtaxing of pipe line and storage facilities is cause.

Sinclair Consolidated buys Louisiana holdings of Dixie Oil, Globe Oil Tex-La-Homa and Potter Palmer interests for reported $15,000,000.

A. L. Walker, chairman of Oklahoma corporation commission, resigns to engage in oil producing. (Mr. Walker is now with the Prairie Oil & Gas Co.)

Government figures show domestic stocks of crude petroleum at end of May 1919 to be 132,000,000 barrels.

H. R. Straight is made vice-president and general manager of Empire oil and gas companies operated from Bartlesville; C. W. Sears is transferred from Ohio to Fort Worth as manager of Empire Gas & Fuel operations in that district.

Harry Steinberger, long identified with Standard interests, including Prairie Oil & Gas Co. and later superintendent for Jones Gas Co., dies in Tulsa.

New Oklahoma Pools Are in the Making Seminole Passes 400,000 Bbls.

By John Power
N. P. N. STAFF WRITER

TULSA, July 13

WHEN the general Seminole area climbed above the 400,000-barrel per day mark the past week, evidence seemed complete that the state is well on the way toward an increasing supply of crude.

New territories, and extensions to old ones were responsible for the increase.

In the majority of the new areas, insufficient exploration has as yet been done to give even a vague line on what their extent may be. However, for the present at least, they have shown themselves capable of keeping the production of the Seminole district at a high figure. With the Oklahoma City pool apparently still on the edge of developments which will tend to increase its production materially, no shortage of Oklahoma crude oil appears imminent.

One of the most important of the new found areas is the Sasakwa pool, in the southeastern part of Seminole county. This pool, described at length elsewhere in this issue of NATIONAL PETROLEUM NEWS, has an areal extent of more than a mile, with seven producing wells making some 13,000 barrels per day. The most recent completion, though a dry hole, does little to condemn the pool in any direction, as it is a direct west offset to another Wilcox dry hole. The latter, however, is offset both north and south with excellent Wilcox sand producers, so that little further knowledge of the possibilities of the field is to be gained from the new water well.

The failure is the Carter Oil Co.'s No. 1 Davis, NE SE SW of 7-6-8. It picked up the Wilcox at 4210-4250 for a hole full of water. Offsetting this test to the north the Sinclair has a well waiting for the cement to set before drilling in. This well, Sinclair No. 1 Davis "B" is offsetting the No. 2 Davis "A," a Wilcox producer making about 3000 barrels per day.

In the event that the test on the "B" lease makes a well in the Wilcox, it may shed some light on the productive possibilities to the northwest of the present production. In any event, the well of the Twin State Oil Co. now being deepened to the Wilcox in the SE NW NW of Sec. 7, about three-eighths of a mile northwest of production will do much to determine the spread of production in this direction.

One of the most active spots in the Seminole region is the strip edging off southeast from the Earlsboro pool toward the Seminole field. Seven wells, making some 26,000 barrels per day, have been enough to start a lively drilling campaign. Seventeen new locations have been announced, bringing the total in the area to around 25. This is another spot about whose future little is known. An area around the new field of considerable size remains to be tested. The field so far is about a mile long by two locations wide, running east and west through the center of 18-9-6.

Seminole Three Years Old

TUESDAY, July 16, was an important third birthday to the oil producing industry.

On that date the Seminole field was three years old, and a healthy youngster it has proved to be.

It has produced more than 345,000,000 barrels of oil in that time, and is still going strong. Total production of the new and old Seminole pool is still hanging close to 400,000 barrels per day.

Still another gas well was added to the Oklahoma City list during the week, when the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. No. 1 Watters, NE NW NE of 25-11N-3W, encountered about 90 million cubic feet per day of gas at 6350 feet. The well, temporarily shut in to await the setting of traps, will be opened before long.

The apparent disregard for the regularities of structure which the subsurface formations have shown makes even more complicated the operating of the state's deepest pool. The gas encountered in the new I.T.I.O.-Foster Pet. Corp. well at 6350 feet is apparently the same gas as that in the Sinclair-Amerada No. 1 Kinter, three quarters of a mile to the southeast, picked up at 6100 feet. At 6300 feet, the Coline Oil Co. No. 1 Olds encountered 11 feet of sand which proved good for better than 5000 barrels daily. The Coline well, north a half and west a quarter mile of the new gas well, has been the only one so far to encounter this sand.

Offsetting on the east this latter well, the Mid-Kansas has what is proving one of the most disappointing wells in the field in its No. 1 Fortson, now the deepest well in the field. Drilled to a total depth of 6536 (and still drilling) the well is making but 90 barrels per day. And this in spite of the fact that the north offset is one of the best siliceous lime wells in the field, making 5600 barrels daily.

On the other side of the field recent developments in the Shell Petroleum Corp. No. 2 Petty are doing nothing to clarify the geological situation. This test is reported as having topped what is believed to be the siliceous lime at 6116, whereas most of the other wells do not get what they believe to be the true siliceous until well below 6300 feet. This test of the Shell's is a north offset to the Sinclair-Amerada No. 1 Kinter, the "gasoline" well, which got its gas at the 6100-foot mark.

A possibility that the I.T.I.O.-Foster No. 1 Johnson, in the NE NW of 25-11N-3W, may have found the same sand as that from which the Coline well is producing is brought to light by reports that it cored three feet of sand at 6333, finding about one foot of pay half way in which showed both oil and gas.

THIS well, a half mile south of the Coline's, will probably test the streak, though it is doubtful if it will make a well of sufficient proportions to justify stopping to produce at the present depth. In all, some 80 locations, announced, tentative and active, dot a map of the Oklahoma City pool as it now stands.

Another well, apparently on the verge of making a producer of sorts is the I.T.I.O.-Foster Pet. Corp. No. 1 Button, in the SW SW SW of 19-11N-2W, which is making around 275 barrels daily from a present total depth of 6398 in the lime. The well, which is approximately a quarter mile southwest of the discovery, will be deepened shortly.

The ever increasing water which is coming with the wells producing in the lime still stands as a big question mark opposite the potentialities

of the field. The discovery well is making some 890 barrels of water along with its 2000 odd barrels of oil, while the Sinclair's No. 1 Stamper, the deepest big producer in the field, is cutting more than 20 per cent basic sediment and water.

Reports that the sand well of the Coline Oil Co. has been making water have been denied, and no water has been listed as yet with the production from the Mid-Kansas No. 2 Fortson, farthest north oil well in the field. A table of production by wells follows:

Company	Well	Barrels	Water
I. T. I. O.-Foster	No. 1 Hall*	2,028	893
I. T. I. O.-Foster	No. 1 Button	274	.....
Sinclair Oil & Gas	No. 1 Stamper	4,970	21%
Sinclair-Amerada	No. 1 Kinter	1,725	.....
Mid-Kansas Oil & Gas	No. 1 Fortson	5,634	.....
Mid-Kansas Oil & Gas	No. 2 Fortson	91	.....
Coline Oil Co.	No. 1 Olds	5,224	.....
Total		19,946	

*Discovery.

Kansas passed another quiet week, with much of the attention being centered on the chat area opened by the McPherson Oil & Gas Co.-Shell Petroleum Corp. No. 1 Ritz, in the NW SE SW of 1-20S-2W, McPherson county. The well, making close to 1000 barrels pinched in, has started to make some water and bad stuff, the oil cutting some two per cent.

Indicative of the chat productive spots which many believe will be found in profusion throughout parts of Kansas, the No. 1 Voshell, of Ted Washebaugh et al., in the NE of 9-21S-3W, ten miles southwest of the No. 1 Ritz, is also reported as showing for a chat well at a total depth of 3100 feet. The well is making some 15 barrels per day while cleaning out and fishing for the bailer. It is thought by some that a more or less blanket condition of chat may extend through this part of the state, the oil production following the structural highs regularly.

* * *

Notes on the Week

The possibilities of the western extension to the Asher pool do not appear as bright as a fortnight ago, unless of course, the discovery well of the townsite extension should prove to be an edge well. The new well, the No. 1 Townsite of the Commerce Development Co. in the NW NE NE NW of 19-6-4, after making as high as 95 barrels of oil per hour from the Viola lime at 3688½, started making some water with the oil after producing at this rate for a short time.

* * *

So far but two wells close in to the Wilcox strike of the Gypsy Oil Co. near Caldwell, Kans., have been started. Both are drilling at around 4500 feet and are said to be running a little lower than the discovery well.

Improved Wood Derrick To Be Exhibited

CLEVELAND, July 13.—A new type wood oil derrick will be shown at the International Petroleum Exposition at Tulsa, Oct. 5 to 12 by the National Lumber Manufacturers Association.

The trade extension department of the association recently has done a great deal of work in heavy outdoor framing, particularly in the oil derrick field. The result is a design for a wood derrick which the lumber industry claims as superior to those made of other materials.

A booklet now is being prepared on "The Use of Lumber in the Oil Industry," to distribute to visitors at the exhibit. The lumber manufacturers announce that the enterprise will be in the nature of a concerted effort to regain, extend and hold its place in the oil industry.

R. Y. Hanlon, who has been devoting much of his time to the oil derrick field, in collaboration with A. C. Horner, manager of the San Francisco offices of the association, and Frank P. Cartwright, chief engineer, will be in charge of the exhibit.

Standard of Indiana Buys Mid-Continent Acreage

(By Telegraph)

TULSA, July 15.—A program of greater aggressiveness in Mid-Continent developments by the Standard Oil Co. of Indiana is seen in the purchase, announced today, of a half interest in Amerada Petroleum Corp.'s acreage in Oklahoma and Kansas on which production has not yet been developed.

The purchase was made through the Dixie Oil Co., Indiana company subsidiary, for $10,000,000, half to be paid in cash. The Dixie acquires the half interest in about 490,000 net acres. The second half of the purchase is to be paid out of one-half of the Dixie's half of oil which may be developed on the properties.

No productive acreage of the Amerada is involved in the deal, although a number of leases are regarded as proven in part. The partnership acreage will be developed jointly by the two companies and the Dixie will share equally in the production obtained after the second $5,000,000 has been paid to the Amerada out of oil. The Dixie will have charge of operations in the northwest part of Oklahoma and Kansas and Amerada will conduct the drilling in the southern part of the state, including the general Seminole area. The acreage is regarded as having large possibilities, as it has been selected after geological examination.

Amerada says that after this sale, which amounts to about 20 per cent of its non-productive acreage, it still has about 930,000 net acres in Venezuela. It has no bank loans or funded indebtedness and, on receipt of the $5,000,000 cash, will have about $7,500,000 cash, and current assets will exceed current liabilities by some $11,500,000, or $12 per share on the outstanding stock. The development program of the two companies has not been announced but is intimated to be one of considerable scope.

Magnolia Pipe Line Runs For May-June

HOUSTON, July 12.—Magnolia Petroleum Company, pipeline department, announces from Dallas headquarters the following crude oil runs for June, which are shown in comparison with May.

	May	June
Hewitt-Graham	150,874.57	147,353.28
Healdton	216,513.00	209,104.79
Cushing	110,715.73	104,839.33
Yale	43,032.74	40,353.66
Augusta	36,760.85	35,422.40
Wewoka	919,393.82	861,240.18
Seminole	63,947.85	59,181.40
Total Okla.-Kans.	1,541,238.56	1,457,495.04
Archer	22,850.26	20,210.30
Burkburnett	67,776.00	61,463.61
Comanche	17,208.28	16,767.12
Electra	90,675.46	80,863.26
Corsicana—Heavy	9,152.96	8,551.21
Corsicana—Light	13,733.25	11,133.18
Henrietta	2,530.74	2,097.60
Iatan	17,178.13	17,319.67
Luling	309,792.31	291,825.83
Lytton Springs	34,644.84	32,011.18
Mexia-Wortham	21,085.37	20,533.10
Mirando	181,902.25	166,978.00
Olden	9,010.73	8,787.01
Penhandle	89,019.93	200,766.78
Panola	1,304.83	269.06
Stephens	8,373.59	8,354.52
Thrall	976.60	1,083.47
Crane-Upton	118,734.60	113,916.27
Glasscock	70,573.84	66,034.30
Winkler	117,526.84	82,351.97
Total Texas	1,204,050.81	1,211,318.10
Haynesville	6,707.70	4,216.41
Bull Bayou	38,394.55	36,514.27
Cotton Valley	22,254.61	23,604.83
Pine Island	30,671.74	27,213.96
Hackberry	32,464.83	22,850.64
Total Louisiana	130,493.43	114,400.11
El Dorado Light	9,700.81	45,235.37
East El Dorado	4,095.93	3,714.21
Smackover	70,331.62	5,979.28
Rainbow	71,517.57	68,891.55
Total Arkansas	155,645.93	123,820.41
GRAND TOTAL	3,031,428.73	2,907,033.66

OKLAHOMA-KANSAS

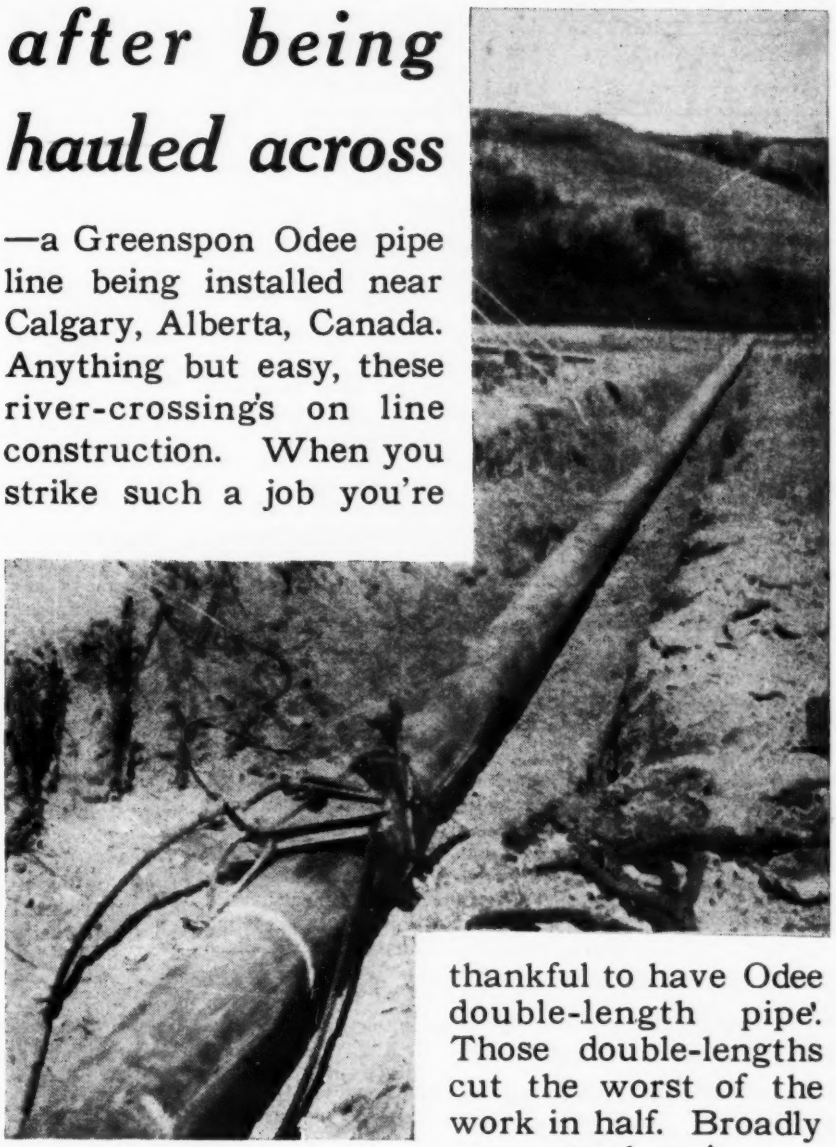
Report for June		Dly. Avg.
Runs	2,168,966.00	72,299.00
Shipments	2,259,312.00	75,310.00
Total Stock	9,899,785.00	.....

TEXAS

Wichita, Wilbarger, Archer		
Runs	162,846.00	5,428.00
Shipments	150,033.00	5,001.00
Petrolia		
Runs	2,098.00	70.00
Shipments	2,098.00	70.00
Eastland, Stephens		
Runs	33,909.00	1,130.00
Shipments	.....	.....

12 inch River Line

after being hauled across



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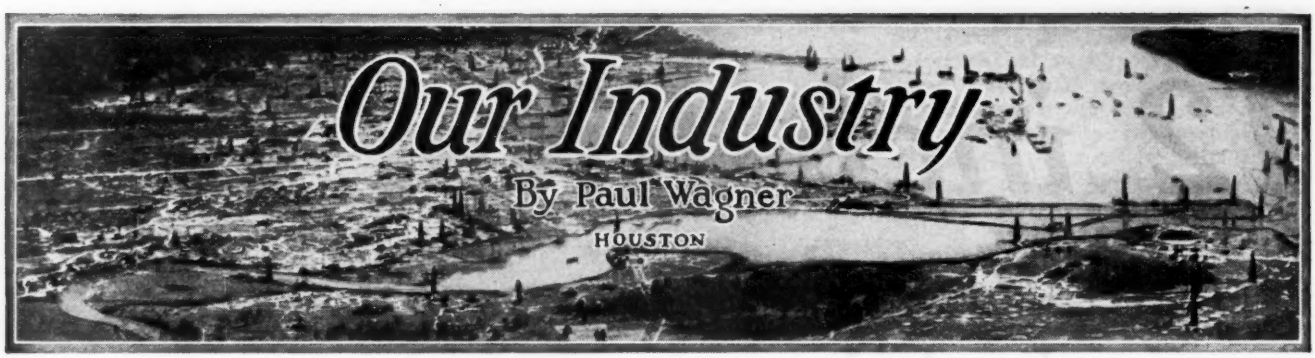


Harry W. Bell, now production engineer of the Lion Oil & Refining Co., at Wink, Tex, recently resigned from the Pure Oil Co., at Chicago headquarters. Before joining the Pure he was with the United States Bureau of Mines at Dallas and previously he was conservation officer for the Louisiana department of minerals at Shreveport.

* * *

H. W. Crum, now Panhandle district geologist of Skelly Oil Co., at Amarillo, was formerly identified with the Denver firm of Fisher & Lowrie. In the interim between his resignation from the Colorado partnership and his joining the Skelly organization, Mr. Crum operated independently in Colorado, Kansas and Texas.

* * *

The smile on the face of J. C. Creeden, production superintendent of Skelly Oil Co., at Wink, Texas, expresses relief at his brief respite from sand dune travels and the dodging of mesquite briars in the Permian salt basin region of the southwest. The picture was taken at Dallas, where he was in attendance at one of the periodical meetings of the American Petroleum Institute division of development and production engineering. Skelly operations in West Texas are restricted almost entirely to Winkler county, hence Mr. Creeden's activities cover greater distances in making hole than they do otherwise.

J. C. Creeden

* * *

E. R. (Bob) Paul has been appointed assistant manager of the personnel department of the General Petroleum Corp., Los Angeles, Pacific Coast subsidiary of the Standard Oil Co. of New York. He was perviously personnel representative at San Francisco.

* * *

B. K. N. Wyllie of the Anglo-Persian Oil Co., London, is now engaged in geological survey work in Papua, conducted by his company in behalf of the Commonwealth government at Melbourne.

* * *

Shifts in the sales department of the Standard Oil Co. of California have resulted in the transfer of W. C. Renwick from Bakersfield to San Diego, where he is now district sales manager; H. C. Flinn becomes district sales manager at Santa Barbara; and E. H. Todd of Oakland takes the place vacated at Bakersfield by Mr. Renwick.

New assistant district sales managers include J. H. McGaregill at Los Angeles; H. L. Hathaway at San Jose; C. J. Moody at Phoenix, Ariz.; C. B. Rogers at Reno, Nev.; S. E. Nord at Portland, Ore.; H. E. Gunnels at San Diego.

T. G. Travis, formerly assistant sales manager at Los Angeles, has been appointed associate sales manager. A. P. Johnsen is now superintendent of the city sales division at Los Angeles.

* * *

Ernest M. Closuit, chief geologist of the Murchison Oil Co., Dallas, and president of one of its subsidiaries, resigned from the Gulf Production Co. organization at Fort Worth, several years ago, to take his present position. Mr. Closuit now takes an important part in the administration of his firm's affairs in West Texas and elsewhere. Earlier in his career he made a reputation for himself in geological work conducted in the Ranger and Wichita Falls districts before tackling the problems of the Mexia-Powell fault zone of central east Texas.

* * *

The next natural objective among oil men seems to be a 10,000-foot hole, according to J. A. Jones, production manager at Los Angeles of the Associated Oil Co. From a geological standpoint, he believes it reasonable to assume conditions will be favorable for greater oil production from the deeper strata than from relatively shallow horizons.

Mechanical phases of 10,000-foot drilling represent other problems. Mr. Jones says one of the first questions to come up is whether present equipment is strong enough and so designed as to take care of the various requirements. He believes the 122-foot modern derrick is sufficiently strong and well proportioned as to furnish such requirements.

The present drilling engine, draw-works, traveling blocks and lines also appear to him to be generally capable of performing under required conditions, although some small changes and improvements might be necessary. Discussing casing and drill pipe, which

Ernest M. Closuit

he describes as "our weakest points in deeper drilling," Mr. Jones says:

"The casing to be used in a 10,000-foot hole will have to be improved, not so much in size or weight as in the quality of the steel of which the casing is made. It is advisable to retain same size and weight casing, therefore the mills have been working on a better grade of steel which they claim will give us 30 per cent additional collapsing strength and 40 per cent additional tensile strength.

"The method now used of floating in the pipe greatly reduces the strain on the collars in the string of casing and makes it possible to land much longer strings than would be otherwise possible."

Referring to collapsing strength, Mr. Jones says the hydrostatic head, or, in other words, the pressure developed by a column of water in the bottom of the hole, approximates 3248 pounds per square inch for a 7500-foot hole; 3680 pounds for an 8500-foot hole and 4330 pounds for a 10,000-foot hole.

If the fluid column were mud instead of water, he says, the pressure would be even greater. Therefore, he holds, the collapsing strength of pipe becomes a very important item in deep drilling.

* * *

President W. S. Farish of Humble Oil & Refining Co., Houston, accompanied by Mrs. Farish, is on a three months' visit to continental Europe. They expect to return home late in September.

* * *

The executive committee of the American Association of Petroleum Geologists has selected New Orleans as the 1930 meeting place of the organization and fixed March 20-22, inclusive, as the dates for the fifteenth annual convention. The executive committee consists of John Y. Snyder of Shreveport, R. S. McFarland of Tulsa, A. Rodger Denison of Fort Worth and Dr. F. H. Lahee of Dallas.

* * *

A new specialty division has been created in the sales department of the Standard Oil Co. of California, San Francisco. J. E. Balsley, formerly district sales manager at Oakland, has been appointed manager and G. H. Richardson, formerly assistant manager of the lubricating oil division, has been made assistant manager of the new organization. E. M. Burnham, formerly of San Jose, succeeded Mr. Balsley at Oakland. J. C. Wagner, formerly at Santa Barbara, succeeded Mr. Burnham at San Jose.

* * *

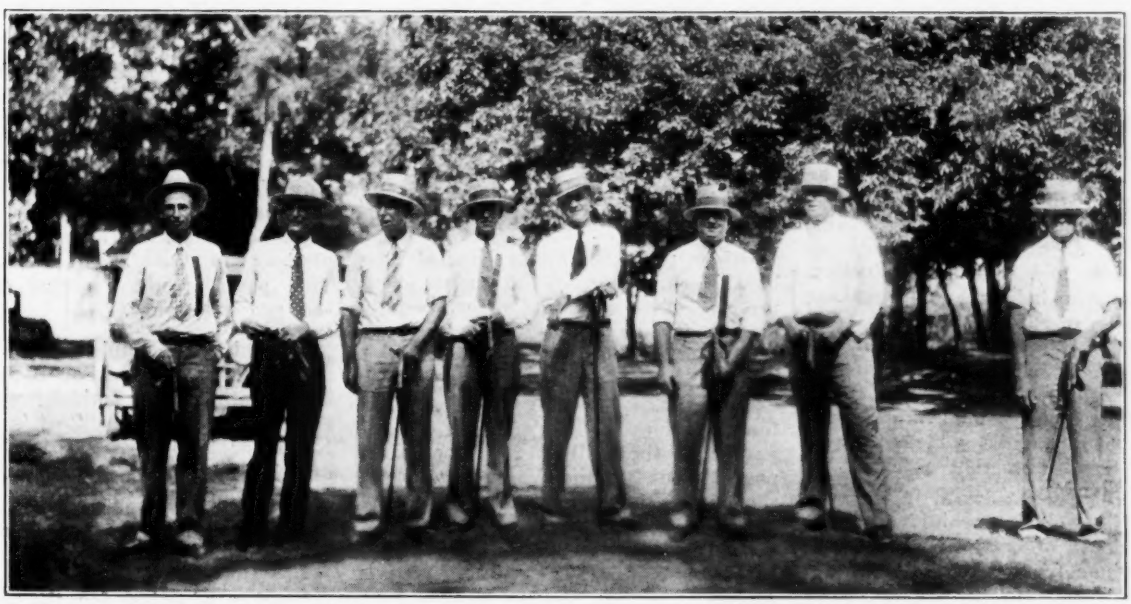
Arno Behnke, Fort Worth division head of the Amerada Petroleum Corp.'s production activities, is widely known among southwestern oil men. In addition to looking after the field activities of his company, principally in Howard county, West Texas, Mr. Behnke finds time to devote to work of the American Institute of Mining & Metallurgical Engineers. He is secretary-treasurer of the Fort Worth chapter of the A.I.M.E.

* * *

Dignified scientists who read detective stories for recreation have nothing on serious-minded production men who reverse their normal activities when they engage in play. An example of that metamorphosis (note to secretary—get the dictionary, please) was given at the annual picnic in Dallas recently of the Sun Oil Co. organization. Among other stunts, which included a "fish-pond" for the kiddies and a baseball game for the girls, there was staged a "horse race" for the producing department crew.

Arno Behnke

The accompanying picture shows producing department representatives taking part. Name of the winner has been conveniently forgotten by special request.



Left to right: R. O. Beggs, Richland and Mexia district superintendent, Richland, Texas; M. L. Brown, assistant field engineer, Dallas; W. E. Soles, gas man, Breckenridge; G. E. Sweeney, Howard county superintendent, Big Spring; S. M. Gladney, Arkansas district superintendent, El Dorado; Henry C. England, Clay Creek superintendent, Brenham; D. B. Kiniry, superintendent, Breckenridge; H. L. Parks, tool pusher, Brenham

California Total Production Makes Small Gain

LOS ANGELES, July 12

ALTHOUGH six wells were completed and one recompleted in the Santa Fe Springs field, to add 25,000 barrels of new oil, California's daily average production for the week ending July 12 showed a gain of only 4000 barrels over the figure for the previous week. The total for the state was 894,136 barrels.

Interesting developments in the Maricopa Flats and Kettleman Hills areas held the attention of California operators the past week. J. J. Doyle Oil Co.'s Weir No. 1 in Sec. 8-11-23, Maricopa Flats, in an area thought by many geologists to be entirely off structure, is now making approximately 800 barrels of clean 26 gravity oil from 3412 feet.

This well, which blew in while making a water shut off test July 4, was killed and 6⅝-inch casing with one joint perforated, run to the bottom. While reversing circulation the well blew in with a reported tubing and casing pressure of 75 pounds.

North American Consolidated's well No. 1 in the same section came in July 9 for an initial production estimated to be 4000 barrels per day of 22.3 gravity oil from 2895 feet. The well is now producing about 3200 barrels per day of 23 gravity oil from an open hole with a casing pressure of 300 pounds.

The Teutholtz No. 1 Rio Grande Oil Co.'s drilling well in the Maricopa Flats district is reported to be in brown shale at 3400 feet, with oil in seams of shale and gas in the ditch. Future development from this well will be watched with great interest.

Production from Kettleman Hills was added to by the completion of Shell Oil Co.'s Armstrong No. 1, an offset to the Milham Exploration Co.'s discovery well. There is considerable controversy about this well both as to its depth and present production. Latest reports indicate it is making 300 barrels of 62 gravity oil from about 6500 feet. The reported amount of natural gas the well is making is 12,000,000 cubic feet. Casing pressure is about 600 pounds and tubing pressure 550 pounds, which is considerably less than that reported at the Milham well.

If Shell's well is straight and the reported depth of 6500 feet is correct, core showings from General Petroleum Corp.'s Ochsner No. 2, which correspond favorably with those found in the Armstrong well, would indicate that General Petroleum's well is down structure about 400 feet.

In the opinion of some geologists the Milham and Shell wells may be on a high of the structure and General Petroleum's well on a low of a saddle instead of off structure.

Strong gas pressure has prevented determination of the actual horizon from which the three wells that have tapped the oil sands are producing. It appears, that contrary to previous understanding the Milham well may be producing from about 6600 feet rather than at 7000 feet, or that it is from this depth that the gas is coming.

Standard Oil Co. is reported to have abandoned its well No. 78 in Sec. 33-21-17 because of a collapsed casing at 1482 feet. Preparations are being made to skid the rig, once the rotary has been torn out, to a new location that will be known as No. 278.

General Petroleum Corp.'s Ochsner No. 2 on the North dome of Kettleman Hills failed to come in on the swab because of presence of over 100 feet of frozen drill pipe in the hole. The top of this pipe which is at 6680 feet is now being side tracked and the drill is down to 6710 feet.

Preparations are under way to set 6⅝-inch casing at 7100 feet in Richfield Oil Co.'s Redding well in the Semitropic district. A production test will be made for gas after which drilling will be continued.

Failure on the part of General Petroleum Corp. to bring in its Lomas well, discovery well for the Santa Barbara Mesa field, back on production caused considerable anxiety among interested operators. This well, which was brought in by Olympic Oil & Refining Co. several months ago, was killed because of lack of storage and an attempt by General Petroleum to bring it to life again failed to show anything more than salt water.

Other projects in the Santa Barbara Mesa area have not shown great promise of increasing California daily average production as they reach critical depths. Gaviota Oil Co.'s No. 1 passed into the Sespe formation at 2202 feet and is coring ahead at 2270 feet. Union Oil Co.'s Durer No. 1 suspended the drill at 2504 feet after passing out of the Vaqueros formation into the Sespe at 2445 feet. Many operators have decided to await developments from offset wells to the discovery well that are at critical depths.

Turning from discussion of what appears to be the most recent fiasco in California's oil history to that grave of high hopes—the townlot area of Lawndale. Announcement was made during the past week of the intention on the part of a large number of operators to abandon their wells in this area. Among these are several that were thought to be in the money as far as commercial production was concerned.

Upper zone production at Santa Fe Springs was up nearly 3000 barrels as a result of the calling off of proration plans a few weeks ago. Last week's peak production from the lower zones of this field was boosted by 1200 barrels to a total of 265,476 barrels from 146 wells. Natural decline accounted for about 23,000 barrels of new production added by the completion of 5 wells in the O'Connell sand.

General Petroleum Corp. led other companies in total production from the Santa Fe Springs field, with 66,846 barrels from 73 wells, 64,753 barrels of which was being produced from the lower zones. The Texas Co. followed with 55,175 barrels from 49 wells, 49,440 coming from the lower sands. Wilshire Oil Co. had the highest average per well, making 13,757 barrels from 3 wells in lower zones, an average of 4581 barrels per well as compared with an average of 1328 barrels per well for General Petroleum if only lower zone producers are considered.

GEORGE F. GETTY'S Baker No. 27 was completed in the Lower Clarke zone at 7703 feet for 450 barrels per day, cutting 26 per cent. Failure of this well to penetrate what is now known as the Third Clarke sand, together with its inability to secure a successful water shutoff, accounts for its poor showing. Only such wells as drill into the deepest Clarke sand obtain good producers for it is in this zone that the necessary kick is found to raise the oil to the surface.

Decline has been rather rapid in many of the recently completed wells at Santa Fe Springs which is expected to limit the height to which the present production peak will rise. Any future peak, after the present one caused by completions in the O'Connell zone, will come from completions in the Third Clarke sand. This peak is not expected to reach the present figure.

Several good completions were made during the past week at Long Beach, important among which were the Congress Petroleum Corp.'s Harvey No. 1 for 1965 barrels from 7000 feet and Dabney Johnson interests' Davis No. 28 and No. 31 completed at 7309 feet and 7417 feet for 2224 and 1610 barrels respectively.

Total production for the field was estimated to be 185,000 barrels from 895 wells, with 137,730 barrels coming from the deep zones.

Refinery Supply Company Occupies New Building

TULSA, July 13.—The Refinery Supply Co. of which W. A. Schlueter is president and manager, has moved into its recently completed two story building at 621 E. Fourth St.

The first floor contains office space, sales rooms and a shipping room. The second floor contains the manufacturing department and store rooms for the package and bulk equipment. The company also has a salesroom and office in Dallas.

The company was formed about 14 years ago by Mr. Schlueter. He had for 18 years been with C. J. Tagliabue Mfg. Co. and was the pioneer in introducing many scientific instruments in the oil industry. The Refinery Supply Co. is a jobber handling all types of scientific instruments and keeps a complete stock on hand at both offices. In addition the company manufactures and sells R. S. and AC-ME specific gravity gas balances, recording gas gravitometers, Reid Vapor Tension bombs, 100-inch water columns, R. S. oil thieves, AC-ME loading dome covers, R. S. charcoal tube adapters, R. S. special Crowell vacuum pumps with motor check valves and switch for field testing cars. Much of the casting for these instruments is done by other companies under contract, but the equipment parts are assembled in the manufacturing rooms and given complete tests before being shipped.

The company during the first half of 1929 shipped supplies to eight foreign countries. The company is the largest of its kind in the southwest.

L. E. Porter

Advance of Richfield Geologist Rapid

LOS ANGELES, July 13.—L. E. Porter, recently appointed chief geologist of the Richfield Oil Co. of California, had a varied career in Rocky Mountain and Pacific Coast territory after his graduation from Leland Stanford University in 1921. Upon leaving school he took up geological work in the Rocky Mountain region, leaving there in 1923 to join the staff of the Long Beach city engineer in California.

Next he became identified with Marland Oil Co. of California, in 1924. His connection with the Richfield company dates from 1925, when he became resident geologist at Fellows, California. He was transferred to the Los Angeles office as valuation engineer, becoming assistant chief geologist in 1928 and chief geologist in 1929.

CLEVELAND, July 13.—R. W. Gallagher of the East Ohio Gas Co., has been nominated a director for a two year term on the board of the American Gas Association. The election will be held at the October convention in Atlantic City.

Completions in Oklahoma and Kansas, Week Ended July 13, 1929

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	6	NW NE SW 33-1-3 W	3245-3840	50

Cotton County

Silurian et al	1	NWc SW NE NW 2-2-10 W	2138-2142	40
Herbow	1	NEc SW 35-3-12 W	T.D. 2242	Dry

Creek County

Suppees et al	1	CWL SE SE 4-17-11 E	T.D. 2366	Dry
Ireland	1	CWL NE SW 11-17-10 E	T.D. 2120	Dry
Gypsy	1	NEc NW 6-14-9 E	T.D. 3786	Dry
Murphy et al	1	SW NE SW 12-17-11 E	1223-1244	20
Collins	2	CNL SE SW 12-17-11 E	1182-1201	40
Sherry et al	3	C NW SE 28-19-9 E	2251-2260	5M
Madden-Madden et al.	2	SEc SW 13-15-9 E	3397-3402	150

Hughes County

I. T. I. O.	1	NE NW SE 6-8-9 E	3425-3433	20M

Lincoln County

Meade Bros. et al.	1	SW SE SW 25-17-3 E	3887-3920	11M

Logan County

Blackwell et al	1	SE NE SW 21-18-4 W	4023-4029	9M
Shell	1	SEc NE 19-19-4 W	4590-4650	5M
Shell	2	NE SE NE 19-19-4 W	5980-6030	35
Crosbie et al	5	NW SW NW 20-19-4 W	6050-6100	100
Shell	8	SE SW SE 30-19-4 W	5975-6037	6635

Muskogee County

Babcock Bros	5	CSL NW NE 8-15-15 E	1602-1608	150
Schofield	1	NEc SW NE SE 32-15-19 E	T.D. 1101	Dry
Pure	5	SE SW NW 14-14-16 E	T.D. 2130 OWD	Dry

Okfuskee County

Umburn	8	SW SE NW 2-10-11 E	T.D. 1780	Dry
Mid-Continent	1	NW SE NE 31-11-11 E	3088-3098	26M

Okmulgee County

Troutt Drlg	8	C SW NW 28-13-14 E	1888-1898	25
Kirkland-Son	2	NWc NE NW 20-15-13 E	T.D. 2145	Dry
Diamond	4	C NW NW 27-13-11 E	T.D. 2574	Dry

Osage County

Peters-Prod. & Ref.	1	SEc SW 22-27-11 E	1657-1680	250
Oliphant	3	SW NW NE 6-23-9 E	2173-2197	....
Continental	4	SW NE SE 5-23-9 E	219-237	2M
Braden-Moore	16	SE SW NE 12-21-8 E	485-495	10
Okla. Natural	1713	SE NE SW 10-21-10 E	1950-1955	1.5M
Zika-Neely	1	NWc SW 12-21-11 E	1822-1842	15

Payne County

Blackwell	1	NE SW SW 7-19-5 E	3785-3789	90

Pawnee County

Adamson	5	SW NE NW 25-21-8 E	1074-1140	30
Stein	1	NEc SW 9-20-7 E	2593-2602	7M
Houston	1	NW SW SW 19-20-7 E	3094-3100	15
Fell	3	NWc SW 32-21-9 E	1070-1100	5

Pottawatomie County

Magnolia-Pierce	1	SW SE NW 17-7-4 E	4150-4174	1095
Magnolia	1	NWc SW 13-7-4 E	4275-4342	375
Slick	2	NWc 20-6-4 E	3787-3795	130
Simms	2	NEc 19-6-4 E	3705-3740	330
Texas	8	SW NW SE 7-8-5 E	4130-4144	16
Wilcox	4	NW NE SE 8-8-5 E	4099-4100	1400
Marland-Shell	2	SE NW SW 18-8-5 E	4322-4335	250
Hall-Briscoe	1	SE SW SE 18-6-4 E	T.D. 3900	Dry
Morris	1	SWc SE 18-6-4 E	T.D. 3525	Dry

Seminole County

Pure	1	NE SW NE 12-8-5 E	T.D. 4327	Dry
Gypsy	1	NEc SE 14-9-5 E	T.D. 4425	Dry
Texas-Indep	2	SEc 22-7-6 E	3128-3164	2440
Texas-Indep	3	SW SE SE 22-7-6 E	3146-3158	30
Shell-Marland	4	NE NW NE 7-8-6 E	4268-4285	1025
Magnolia	1	SW SE NE 18-9-6 E	4395-4406	2400
Magnolia	4	NEc SW 18-9-6 E	4417-4429	2400
Marland	1	NE NW SE 17-9-7 E	3340-3378	60
Continental	1	SEc NW 18-9-7 E	4205-4217	2465
Magnolia	1	NEc SW 4-8-7 E	2361-3425	125
Gypsy	2	SW NE NE 5-7-7 E	4252-4266	3870
Texas	1	NE SE SE 23-5-7 E	4199-4203	700

Stephens County

Lone Eagle	11	NE NW SE 34-1-8 W	1840-1852	100
Amerada	5	SE NE SW 12-1-4 W	2279-3053	165
Franklin	9	SE NW NE 24-1-4 W	2764-2833	750
Shaner et al	3	CEL SW NE 31-1-8 W	1795-1805	7M
Pelwin	1	SWc SE 22-3-9 W	T.D. 3180	Dry
Magnolia	10	SWc SE 8-2-4 W	T.D. 1870	Dry

Wagoner County

Lasarky et al	7	NWc SE SE NE 25-17-16 E	T.D. 1371	Dry
Knox-Shouse	1	CNL SE SE 12-16-15 E	1025-1035	15

KANSAS

Butler County

Empire	16	SE NW SW 19-26-5 E	2620-2705	100
Phillips	1	C SE NW 36-27-5 E	T.D. 3127	Dry
Shell	1	SE SW SE 10-24-3 E	T.D. 3023	Dry

Cowley County

Rider et al	1	NE NW NW 30-31-5 E	T.D. 600	Dry
Indep.-Vickers	3	NW NE NE 16-32-4 E	3276-3280	250
Hull	6	NW SW NW 19-32-5 E	3000-3070	100
Minnehoma-Murphy	3	NEc SE 4-31-8 E	1955-1975	100

Dickinson County

Johnson	1	SW NE NW 32-16-4 E	T.D. 3020	Dry

Greenwood County

Empire	1	SW NW SE 9-22-10 E	T.D. 2443	Dry
Roth-Faurot	1	NE SE SE 13-25-8 E	2458-2473	6
Mid-Continent	4	NE NW SW 13-24-12 E	1710-1720	15
Empire	1	SE SW NW 36-23-11 E	1849-1865	200

Marion County

Empire	1	SW NE NE 28-19-2 E	T.D. 3147	Dry

Sumner County

Marland	1	NWc SW 26-34-2 E	3444-3485	495

Woodson County

Mellrose-Sullivan	1	NEc NW 35-23-14 E	1637-1650	15

Completions in California, Week Ended July 6, 1929

Long Beach

Company	Well No.	Location	Depth	Init. Prod.
Dabney Johnson	No. 35	....	4590	970
Delaney Pet. Co.	Holton No. 1	....	6910	100
Richfield Oil Co.	Bernstein No. 3	....	7523	575
Santa Fe Springs				
Bandini Pet. Corp.	Off 14	....	6775	8700
Bandini Pet. Corp.	Off 17	....	6880	7500
Commodore Pet. Co.	Landle 3	....	6500	5500
General Pet. Corp.	S. F. S. 191C	....	6809	7660
Getty, George F.	No. 27	....	7705	960
Richfield Oil Co.	Industrial No. 1	....	6744	5808
Shell Oil Co.	G. H. N. No. 18	....	6522	1250
Shell Oil Co.	Slusher B-1	....	6522	550
The Texas Co.	Batson No. 5	....	6825	3855
The Texas Co.	Wickman No. 5	....	6838	9000
Union Oil Co.	Bell No. 43	....	6800	4750
Ventura Avenue				
Pacific Western Oil	S. P. No. 2	....	7033	800
Belridge				
Ohio Oil Co.	No. 27	....	714	25
Kern Front				
General Pet. Corp.	Young No. 34	....	1970	250 (on pump)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended July 13, 1929

OKLAHOMA

Cotton County

Company	Well No. & Farm	Location
Payne-McGaha	1-Beck	NW SW SW 29-4-11 W
Creek County		
McCready et al	2-Hardridge	CSL NW SE 30-17-11 E
Pure-Prairie	5-Wacoche	NEc NW 20-18-7 E OWD
Murphy et al	2-Bruner	CSL NE SW 12-17-11 E
Winget et al	1-McIntosh	NEc NW 13-17-11 E
Skelly	1-Replogle	SWc SE SW 10-15-8 E OWD
Franchot	6-Mitchell	SW NE SW 17-15-8 E
Skelly	2-Foster	SEc SW 30-15-9 E OWD
Wilcox	10-Nash	NEc SW SW 24 15-10 E
Logan-Kessler	2-Morton	SE NE NW 27-14-10 E
Garvin County		
Magnolia	1-Parnell	NEc 16-1-3 W OWD
Grant County		
Boucher et al	1-Dedmon	SWc SE 12-28-4 W
Grady County		
Ray	1-Grady	NWc 20-5-8 W
Harper County		
Sinclair	1-Howell	C SW SW 14-26-24 W
Hughes County		
Sinclair	1-Tiger	SWc SE 5-6-8 E
Jefferson County		
Pearce-Brown	1-Fisher	SEc SW 13-6-7 W
Logan County		
Sinclair	2-Knecht	NW SW NE 28-18-4 W
McClain County		
Homaokla	1-Newsome	SE NE NE 16-5-3 E
McIntosh County		
Western Natural	1-Wells	CNL S½ SE NW 15-11-17 E
Muskogee County		
Bryan	8-Barnett	CEL SE NE 8-15-15 E
Bryan	5-Barnett	CWL SE NE 8-15-15 E OWD
Mack Drlg.	1-Friday	SEc NE NW 8-15-15 E
Troutt Drlg. et al.	2-Friday	NEc SE NW 8-15-15 E
Neeley et al.	11-Cherry	CSL SE NW 14-14-16 E
Mussellem	4-Garber	SWc NW SE NE 4-13-19 E
Oklahoma County		
Coline	2-Olds	C NE NW 24-11-3 W
Coline	1-Clayer	NEc SE 25-11-3 W
Sinclair	3-Stamper	SEc NW 30-11-3 W
Sinclair	2-Stamper	SWc NW 30-11-2 W
I. T. I. O.	2-Bodine	SE NW NW 30-11-2 W
Prairie-Slick	2-Hiddleston	SW NW SW 29-11-2 W
Prairie-Slick	3-Hiddleston	SEc SW 29-11-2 W
I. T. I. O. et al.	1-Anderson	NEc NW 30-11-2 W
I. T. I. O. et al.	1-Emmerson	NEc SW 30-11-2 W
Okfuskee County		
French et al.	3-Summers	NW NE SW 17-11-12 E
Sunray	1-Dindy	SEc NW 31-11-11 E
Mid-Continent	2-Dindy	SEc SW NE 31-11-11 E
Atlantic	5-Robinson	NE NW SW 12-10-11 E
Misener	1-Johnson	NWc SE 2-10-11 E
Okmulgee County		
Swindler-Son	1-Doneghy	SWc 32-16-12 E
Kirkland-Son	2-London	CWL NW SW 19-15-13 E
Laurel	3-Carter	CEL SE SE 10-15-14 E
Pal Oil Co.	2-Lewis	CSL SE NE 20-14-13 E
Selby	1-Flint	SEc NE NW 26-14-14 E
Osage County		
Winona	14....	SE SW SW 35-24-9 E
Okla. Natural	1718....	NE NW SE 24-22-11 E
Elliott-Smith	1....	NWc NE 31-22-12 E
Peters et al.	12....	SW NE NW 17-27-6 E
Braden-Moore	17....	NEc SE NW 12-21-8 E
Mitchell	1....	NE NW NE 7-21-9 E
Payne County		
Shaffer	2-Echo-Hawk	NWc NE 9-18-5 E
Pawnee County		
Martin et al.	5-Cotton	CEL SW 6-20-8 E
Pontotoc County		
I. T. I. O.	1-Shoate	NEc SE 1-4-4 E
Homaokla	1-Sheleds	NW SE NW 33-5-8 E
Dixie	2 Herman	NE SE SE 1-4-7 E
Sinclair	2-Gardner	SEc 6-4-6 E
Pottawatomie County		
Graham	1-Townlot	NW SW NW 8-9-5 E
Wofford Drlg.	1-Green	SWc 28-8-5 E
Keister-Manning	1-Tibbes	NEc SW 9-8-4 E
Minnehoma	3-Simms	NEc SE 16-7-4 E
Darby-Atlantic	1-Cardwell	SWc NW 15-7-4 E
Martin-Erwin	1-Kelley	SE NE NE 2-7-4 E OWD
Atlantic et al.	1-Douglas	SWc SE 9-7-4 E
Magnolia	2-Tarter	NWc SW 15-7-4 E
Atlantic Prod. et al.	3-Burke	SEc NE 16-7-4 E
Independent	2-James	NE SE SW 17-7-4 E
Gypsy	3-Green	NEc SE 17-7-4 E
Magnolia	4-Billington	SW NE NW 22-7-4 E
Gypsy	1-Pandosh	23-6-4 E
Amerada et al.	1-Vineyard	NW NE NE 15-7-3 E

Seminole County

Company	Well No. & Farm	Location
Prairie	2-Raitman	NE SE NW 18-9-6 E
Prairie	3-Raitman	SW SE NW 18-9-6 E
Prairie	1....	SE NE NW 18-9-6 E
Independent	10-Harris	NE SE NW 23-7-6 E
Carter	1-Cox	SE SW SE 31-10-6 E
Shell	2-Crump	NEc SW 32-10-6 E
Magnolia	1-Panos	SE NE NE 18-9-6 E
Minnehoma	1-Nice	SW NW NW 17-9-6 E
Gypsy	2-Noble	SE NW NE 18-9-6 E
Gypsy-Devonian	4-Payne	NE SW SE 18-9-6 E
Gypsy-Devonian	5-Payne	NW SW SE 18-9-6 E
Gypsy-Devonian	3-Payne	SW NE SE 18-9-6 E
Barnsdall	2-Noble	NE SE SW 18-9-6 E
Magnolia	2-Panos	SW NE NE 18-9-6 E
Magnolia	4-Anderson	SW NW SE 18-9-6 E
Magnolia	3-Anderson	SE NW SE 18-9-6 E
Magnolia	9-Anderson	NW SE NE 18-9-6 E
Magnolia	8-Anderson	NE SW NE 18-9-6 E
Pine	4-Harjo	SE SW SE 6-8-6 E
Empire	1-Brown	SEc 3-8-5 E
Sinclair	5-Bean	NW NE NW 11-8-5 E
Champlin	3-Tewee	NE SE NE 14-7-6 E
Blackwell	5-Talley	SE SW SW 14-7-6 E
Gypsy	5-Payne	SEc NE 5-7-7 E
Gypsy	11-Hulhoke	NW SE SE 14-7-6 E
Independent	6-Davis	SWc 13-7-6 E
Independent	7-Tewee	SW NE SE 14-7-6 E
Independent	11-Harris	SE NW NW 23-7-6 E
Mid-Continent	12-Smith	SE NW SE 5-7-7 E
Independent	7-Davis	C SW SW 13-7-6 E
Independent	12-Harris	NE NW NW 23-7-6 E
Gypsy	1-Walker	NE SW SE 5-7-7 E
Carter	5-Larney	NWc 24-7-6 E
Sinclair	4-Phillips	NW SE SE 5-7-7 E
Sinclair	3-Phillips	SW NE SE 5-7-7 E
Sinclair	2-Phillips	NEc SE 5-7-7 E
Sinclair	7-Davis	NE SW SE 7-6-8 E
Sinclair	6-Davis	NE NW SE 7-6-8 E
Sinclair	5-Davis	NWc SE 7-6-8 E
Shell	2-Holatka	NW NE SE 7-6-8 E
Sinclair	1-Peter	SE NW NW 15-5-8 E
Texas	3-Jefferson	NW SE SE 23-5-7 E
Ramsey	1-Jefferson	NE SW SE 23-5-7 E
Empire	3-Coker	NW SE SW 13-7-6 E
Sinclair	4-Bean	NE NW NW 11-8-5 E
Gypsy	1-Noble	SW NW NE 18-9-6 E
Gypsy	2-Harjo	NE NW SE 18-9-7 E
Magnolia	1-Wolf	SW SE SW 20-8-7 E
Magnolia	3-Reed	NW SW NE 4-8-7 E
Harris	1-Harjoche	SE NE SE 8-6-6 E
Magnolia	1-Spillman	SE NE SE 12-6-7 E
Magnolia	8-Reed	SE NW SW 17-5-8 E
Magnolia	7-Reed	NEc SE NW SW 17-5-8 E
Prairie	1-Dean	NE SE SE 12-6-7 E
Prairie	2-Patton	NE NW NE 18-6-8 E
Stephens County		
Kidney et al.	2-Dare	SW NW NW 1-2-8 W
Pace et al.	1-Peck	SWc NE SE NE 13-2-8 W
Pace et al.	1-Bristowe	NEc SE 29-2-7 W
American Drlg.	5-Nigh	SE SW NW 34-1-8 W
Carter	7-Simpson	NWc SE SE 34-1-8 W
Franklin	2-Beel	NWc SW NW NE 24-1-4 W
Wagoner County		
Perry-Hartman	1-Bruner	CEL SW SE 19-17-16 E
Moore et al.	1-Richardson	SEc NW 7-16-16 E

KANSAS

Butler County

Empire	1-DeFore	NEc NW 36-29-4 E
Blaksley-Wentz	1-Getter	NW NE SE 6-28-6 E
Garden	3-Sluss	CEL NW NE 6-27-6 E
Empire	11-Cranston	SW NE SE 22-27-5 E
Lario	1-Lancer	NWc 15-26-3 E
White Eagle	1-Stone	NE NW SW 2-25-5 E
Southbrook	1-Joseph	SE NW SE 25-24-3 E
Cowley County		
Trees	1-Brubaker	C SW NE 12-34-6 E
Skelly	1-Youle	NEc SE NE 16-32-4 E
Clerance-Reiter	1-Claybaugh	SE NW NE 19-31-5 E
Wakefield et al.	1-Daniels	SE SW SE 7-30-5 E
Tulsa	1-Coalielsier	SWc SE 4-30-5 E
Landon	1-Daniels	NEc SE 6-30-5 E
Greenwood County		
Murphy et al.	7-Olsen	NE NW SE 6-25-9 E
Mohawk	5-Grundy	C SW NW 1-27-11 E
Paul et al.	1-Cross	SWc 6-27-11 E
Conky-Bridgeman et al.	1-Rock	NW NE NE 7-27-12 E
Bisgno et al.	2-Ralston	SWc NE 9-25-13 E

(Continued on Page 55)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended July 13, 1929

(Continued from Page 54)

Company	Well No. & Farm	Location	
Prairie	2	NWc SE 9-25-13 E	
Lassen et al	2-Gregg et al.	SEc NE SE NW 6-25-9 E	
Ward-McGinnis	1-Anderson	NE NW SW 13-25-10 E	
Bitler-Hays	1-Hammond	SWc NE 3-25-10 E	
Sheddy et al	3-Sharp	C N½ N½ 5-24-13 E	
Shaffer-Howell	15-Snyder	CNL NE NW 15-23-13 E	
Empire	2-Patterson	CWL SW NW 36-23-11 E	
Phillips	1-Beal	NE NW NE 28-23-11 E	
Texas	7-Edwards	SE SW SE 21-23-11 E	
Empire	2-Holderman	NE SE SW 15-22-12 E	
Empire	1-Nicoll	NWc NE 28-22-10 E	
Phillips	5-Prixlee	SW SE NW 10-22-10 E	
Marion County			
Davis et al	3-Rample	SE SW NW 7-19-3 E	
Sumner County			
Derby-Shawver	1-Norrish	NWc 35-34-2 E	
Shell	2-Miller	SW SE SW 17-32-2 E	
Woodson County			
Kansas	2-Simpson	NW SE SW 35-22-14 E	
TEXAS			
NORTH CENTRAL AND EAST CENTRAL			
Anderson County			**Survey**
Humble	2-Neches River Bed	....	State Land
Brown County			
Gunn Prod	10-Gunn	Blk-155	Smith
Lloyd	16-Stanley	Blk-139	Smith
Lloyd	22-Collier	Blk-139	Smith
Hart	1-Scott	Blk-100	Douglas
Callahan County			
Bradstreet-Holden	4-Cavanaugh	Sec-98	Comal Co. Sch. Ld.
Meridith Benton-United Royalties	2-Hickman	Sec-2	I&GN
McCleary et al	1-Walker	Sec-32	D&DA
Humphreys Bros.	7-Cary	Sec-40	D&DA
Crites-Williams	1-Robinson	Sec-47	D&DA
Beams	4-Jackson	Sec-14	BBB&C
Coleman County			
Foster et al	3-Hass	Sec-71	GH&H
Eastland et al	4-Keeney	Blk-269	Cochran
Midwest Explor	1-Buck	Blk-269	Cochran
Simmons-Jones	1-Baker	Sec-7 Blk-630	Fisk
Indep. et al	1-Ballard	Blk-712	Frizell
Carter	2-Kingsberry	Blk-496	Whorton Co. Sch. Ld.
White-Pinkerton et al.	1-Boyle	Sec-13	HT&B
Van Bibber et al.	1-Pearce	Sec-101	ET
Eastland County			
Garrett-Moore et al.	1-Casey	Blk-59 League-3&4	McClennon Co. Sch. Ld.
Hickock	3-Kimbrough	Sec-44 Blk-4	H&TC
Hopkins	2-Davis	Sec-54 Blk-4	H&TC
Mook Texas	10-Sibley	Sec-19	Van Norman
Porter	1-Morgan	Sec-46	Lavaca Co. Sch. Ld.
Root Fehl-Belva	1-Goode	Sec-56	BBB&C
Texas Dev	1-Westlenholm	Sec-44 Blk-4	H&TC
Hickock	1-Johnson	Sec-25 Blk-3	H&TC
Kokomo	1-Clements	Sec-10 Blk-1	H&TC
Gholson	1-Collins	Sec-18 Blk-1	H&TC
Conway Bros.-Champlin	5-Simmons	Blk-27	McLennon Co. Sch. Ld.
Texas Pacific	3-Fee	.....	Durocher
Erath County			
Associated Prod	1-Smith	Sec-24	Espinosa
Culberson Bros	1-Wyatt	Sec-37	SA&MG
Grimes County			
Deering Bros. et al.	1-Kelley	....	Berryman
Haskell County			
Hammond et al	1-Brinckley	Sec-44	Carrington
Evans et al	1-Reynolds Cattle Co.	....	Fenner
Barnsdall	1-Roberts	Sec-170	Mass
Jones County			
Roeser-Pendleton	5-Grayson	Sec-13 Blk-19	T&P
Texas	4-Camp	Sec-13 Blk-19	T&P
Stephens County			
Lone Star	1-Townsend	Sec-1	SP
Norman et al	1-Glasscock	Sec-80 Blk-4	T&P
Texas Louisiana Power	1-Helfey	Sec-68 Blk-6	T&P
Loftin-Jordan	1-Smith	Sec-1	BAL
Shackleford County			
Holden	1-Jackson	Sec-85 Blk-12	T&P
Big States	8-Russ	Sec-17 Blk-11	T&P
Cranfill-Reynolds	1-Flippen	Sec-35 Blk-11	T&P
Gilman-McMurray	3-Mathews	Sec-2	ET
Manning et al	4-Reynolds	Sec-11 Blk-11	T&P
Sedgwick	1-Morris et al.	Sec-200	ET
Shaheen et al	2-Whitney	....	Leahy
Throckmorton County			
Morton	2-Mathews	Sec-227	ET
NORTH TEXAS			
Archer County			
Peacock	1-Williams	....	Swing
Atlantic-Johnston	2-Prideaux	Sec-1860	TE&L
Johnston	1-Garvey	Sec-1865	TE&L
Hutchinson	1-Hutchinson	Blk-142	Harris
Kemrow	8-Campbell	League-3 Blk-1	DCSL
Magnolia	1-Portwood	Sec-2411	TE&L
Humble	5-Kunkel	.....	BBB&C
Madden	1-Anderson	Blk-8	BBB&C
Gilliland et al	4-Roach	Sec-1595	TE&L
Continental	6-Richardson	Blk-10	McCoy
Williams	1-Rounds	.....	BBB&C
Cullum-Prairie	1-Falls Co. Sch. Ld.	Blk-17	Falls Co. Sch. Ld.
Bridwell-Cont	3-Logan	Blk-25	Taylor
Continental	2-Falls Co. Sch. Ld.	Blk-16	Falls Co. Sch. Ld.
Tidal	5-Turbeville	Blk-152	Carson
Burns	3-Wilson	Sec-114	ATNCL
Brown Farm	5-Brown	.....	SP
Fain-McGaha	1-Cranfill et al.	.....	Rodemeyer
Brown-United Prod.	5-Taylor	Sec-17 Blk-11	ATNCL
Brown-United Prod.	6-Taylor	Sec-17 Blk-11	ATNCL
Pace	1-Mankins Est.	Sec-1	SP
Hammon	1-Hawley	Sec-2	SP
Cooke County			
Humble	3-Field et al.	.....	Stanley
Kewanee	2-Hair	.....	Lockhart
Lloyd	3-Wheelock	.....	Underwood
Kewanee	6-Hyman	.....	ET
Kewanee	5-Hyman	.....	ET
Danciger	1-Huggins	.....	SP
Humble	2-Field et al.	.....	Stanley
Foard County			
Harris	1-Middlebrook	Sec-363	H&TC
Montague County			
Wood-Benton-Lesh-McCall	1-King	.....	Burnside
Farlyn	1-Cunningham	.....	Norton
Wichita County			
Continental	14-Burnett	Sec-2	T&NO
Golding-Cochran	6-M-Waggoner Bros.	Blk-22	George
Texas	8-A-Waggoner Bros.	Blk-28	George
Ryan	109-Nance	.....	Fowler
United Prod. et al.	1-Munger	Blk-31	KWVFL
United Prod. et al.	1-Munger	Blk-30	KWVFL
Melat-Graham-Christie	1-Chilson	League-3 Blk-9	DCSL
Stumph-Melat-Graham	1-Grudup	League-4 Blk-10	DCSL
Continental	1-Dodson	.....	Hornsby
Wilbarger County			
Grayback Dev	8-Waggoner	Sec-40	MEP&P
Hoover Scientific Dev.	1-Waggoner	Sec-25 Blk-2	H&TC
Phillips	RR-4-Waggoner	Sec-44 Blk-4	H&TC
Barkley-Meadows	B-2-Waggoner	Sec-17 Blk-4	H&TC
Barkley-Meadows	C-9-Waggoner	Sec-5 Blk-5	H&TC
Clark et al	3-Waggoner	Sec-25 Blk-4	H&TC
Fain-McGaha	W-13-Waggoner	Sec-32 Blk-4	H&TC
Consolidated	O-6-Waggoner	Sec-40	MEP&P
Consolidated	O-7-Waggoner	Sec-40	MEP&P
Empire	A-7-Waggoner	Sec-32 Blk-4	H&TC
Knight et al	A-4-Waggoner	Sec-40	MEP&P
Knight et al	A-5-Waggoner	Sec-40	MEP&P
Grayback Dev	6-Waggoner	Sec-40	MEP&P
Grayback Dev	7-Waggoner	Sec-40	MEP&P
Young County			
Southern-Gray	1-Cullers	.....	Stinnett
Perkins-Butler	2-Whit	Sec-160	TE&L
PANHANDLE			
Carson County			
Danciger	2-Moore	Sec-125 Blk-4	I&GN
Gray County			
Danciger	1-Williams	Sec-7 Blk-1	ACH&B
Gulf Prod	2-Saunders	Sec-3 Blk-1	ACH&B
Operators	1-Bowers	Sec-93 Blk-B-2	H&GN
Wheeler County			
Lone Star 3	3-Burcham	Sec-91 Blk-17	H&GN
WEST TEXAS			
Crane County			
Texas Pacific	2-Univ.	Sec-34 Blk-30	Univ.
Church-Weekly	3-Duoll	Sec-39 Blk-30	Univ.
Warner-Quinlan	4-Davis	Sec-39 Blk-30	Univ.
Gulf Prod	66-McElroy	Sec-200 Blk-F	CCSD
Crockett County			
Moncrief et al	1-Andrews	Sec-57 Blk-UV	GCSF
Moncrief et al	2-Todd	Sec-29 Blk-WX	GCSF
Glasscock County			
Midwest Explor	1-Edwards	Sec-20 Blk-34	T&P
Gulf Prod	6-Clay	Sec-155 Blk-29	W&NW
Howard County			
Plymouth	4-Morgan et al.	Sec-5 Blk-32	T&P
Owen-Sloan	12-Roberts	Sec-136 Blk-29	W&NW
Moody	18-Roberts	Sec-136 Blk-29	W&NW
Moody	17-Roberts	Sec-136 Blk-29	W&NW
Cranfill-Reynolds	2-Abrams	Sec-3 Blk-32	T&P
Loving County			
Lockhart	2-Bowen et al.	Sec-92 Blk-1	W&NW
Pecos County			
Webb	1-Webb	Sec-105 Blk-OW	TM
California	19-Yates	Sec-34 Blk-194	TC
Gulf Prod	24-Yates	.....	Runnels Co. Sch. Ld.
Phillips	2-Monroe	Sec-39	TC
Moncrief et al	1-Univ.	Sec-27 Blk-18	Univ.
Sun	1-Univ.	Sec-36 Blk-18	Univ.
Shell	11-Smith	Sec-27 Blk-194	TC
Phillips	3-Ramsey	Sec-17 Blk-194	TC
Seminole	1-Cordova Oil Corp.	Sec-51 Blk-11	H&GN
Phillips	3-Smith	Sec-24 Blk-194	TC
Jay Hawk	1-Price	Sec-6 Blk-12	H&GN
Rowan-Tong	1-McDonald	Sec-46 Blk-12	H&GN
Moncrief et al	2-Tippett	Sec-36 Blk-12	H&GN
Taylor-Link	2-Univ.	Sec-31 Blk-17	Univ.
Tidal	2-Univ.	Sec-3 Blk-20	Univ.
Moncrief et al	1-Forborg	Sec-539	Arnold et al.
Scurry County			
Camp Springs	3-Gwinn	Sec-12 Blk-3	H&TC
Upton County			
Gulf Prod	65-McElroy	Sec-200 Blk-F	CCSD
Winkler County			
Southern Crude	T90 No. 4-Hutchins	Sec-47 Blk-26	PSL
Cranfill-Reynolds	2-Hutchins	Sec-47 Blk-26	PSL
Humble	C-13-Hendricks	Sec-10 Blk-B-12	PSL
Marland	1-Morton	Sec-16 Blk-B-12	PSL
Southern Crude	T88CX4-Hendricks	Sec-21 Blk-26	PSL
Murchison	1-Lemar	Sec-35 Blk-B-5	PSL

Completions in Texas, Week Ended July 13, 1929

NORTH CENTRAL AND EAST CENTRAL

Brown County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Lloyd	15-Stanley	Smith	Blk-139	432-436	1
Evans	1-Martin Heirs	HT&B	Sec-11	982-984	60
Curry	4-Chambers	Logan	Blk-147	1326-1334	3½
Whiteside	8-Boyson	ET	Sec-7	T.D. 790	Dry
Lloyd	21-Collier	Smith	Blk-139	T.D. 458	Dry
Cranfill-Reynolds	1-Robertson	SA&MG	Blk-3	T.D. 1380	Dry

Callahan County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Bailey-Mancill	1-Williams	Univ.	Sec-139	T.D. 462	Dry
Stalker	1-Howell	Victoria Co. Sch. Ld. Sub-Div. 9		T.D. 1628	Dry
Moutray	1-Owens	D&DA	Sec-20	T.D. 922	Dry
Moutray	18-Flores	BBB&C	Sec-149	T.D. 745	Dry
Meridith Benton United Royalties	1-Hickman	I&GN	Sec-2	T.D. 705	Dry
Grassroots	9-Klutz	Comal Co. Sch. Ld. Blk-43		T.D. 488	Dry
Beams-Ungreen-Frazier	1-Snyder	BBB&C	Sec-140	T.D. 1141	Dry
Moutray	19-Flores	BBB&C	Sec-19	703-706	8
Schaffner	4-Cowan	Comal Co. Sch. Ld. Sec-74		370-378	1½
Redmond	1-Moore	SP	Sec-9 Blk-6	1845-1847	30
Crites	1-Brown	D&DA	Sec-47	820-827	9M

Coleman County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Taylor-Link	1-McClure	ET	Sec-105	658-670	95
Vacuum et al	1-Bennett	Johnson	Blk-480	1800-1814	25
Clark-Cowden et al.	1-Webb	Young	Blk-179	T.D. 2510	Dry
Hoffman-Page et al.	1-Casey	Cockran	Sec-3 Blk-657	T.D. 1860	Dry
Jackson	1-Dancey	Luckenback	Blk-258	T.D. 735	Dry
Roth-Faurot	4-Stevens	Coleman Co. Sch. Ld. Blk-57		T.D. 2185	Dry
Cont. et al	2-Overall	GH&H	Sec-12 Blk-1	T.D. 2365	Dry

Eastland County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Conway Bros.-Champlin	4-Simmons	McLennon Co. Sch. Ld. Blk-27		T.D. 1161	Dry
Hoffer	1-Gray	SP	Sec-485	3451-3457	816
Moore-Lewis	2-Foster	H&TC	Sec-27 Blk-2	1282-1294	115

Falls County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Humble	1-Pusek	Turner		T.D. 3581	Dry

Hill County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Harper et al	1-Jones	Graves		T.D. 688	75

Jack County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
F. H. E.	3-Box	Hughson		3083-3088	175

McCulloch County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Roth-Faurot	2-Smith	Erkhardt	Blk-1293	1577-1578	2.4M

Milam County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Rogers-Heap	1-Dunvan	Acoste		T.D. 2230	Dry
Groneman Bros.	1-Dornheifer	Robertson		T.D. 3535	Dry

Shackleford County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Dull-Earl	8-Mathews	ET	Sec-32	1147-1160	50
Gilman-McMurray	1-Mathews	ET	Sec-2	633-637	8
Gilman-McMurray	2-Mathews	ET	Sec-2	631-637	7
Combest	1-Mathews	ET	Sec-30	T.D. 1249	Dry
Hughes	4-Diller Bros.	Ahrenbeck	Sec-4	T.D. 804	Dry
Albany	2-Reynold	T&P	Sec-26 Blk-11	T.D. 1291	Dry
Cranfill-Reynolds	1-Diller Bros.	ET	Sec-5	T.D. 900	Dry
Hogan	1-Flippen	T&P	Sec-36 Blk-11	T.D. 1010	Dry
Hughes	1-Reynolds Cattle Co.	ET	Sec-101	T.D. 1441	Dry

Stephens County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Midwest Explor.	1-Dannehold	TE&L	Sec-1504	T.D. 3492	Dry

Throckmorton County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Herbert	1-Reynolds Cattle Co.	AB&M	Sec-18	T.D. 1888	Dry

NORTH TEXAS

Archer County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Petroleum Prod.	3-Kunkel	BBB&C	Sec-3	1168-1184	350
Gwynn	3-Thompson	ATNCL	Sec-20 Blk-16	1587-1592	125
Fain-McGaha	4-Taylor	ATNCL	Sec-17 Blk-11	1490-1492	55
Burns	1-Wilson	ATNCL	Sec-114	1212-1249	26
Brown-United Prod.	4-Taylor	ATNCL	Sec-17 Blk-11	1484-1487	160
Turner	1-Lyles	SP	Sec-2	T.D. 1724	Dry
Pois-Johnson	3-Wilson	Geraldine	Sec-85 Blk-1016	T.D. 1550	Dry
Petroleum Prod.	1-Taylor	ATNCL	Sec-17 Blk-10	T.D. 1820	Dry
Perkins-Cullum	2-Perkins et al.	ATNCL	Sec-10	T.D. 1640	Dry
Moran-Prairie	1-Richardson	McCoy	Blk-14	T.D. 1200	Dry
Humble	3-Logan	Taylor	Blk-26	T.D. 1165	Dry
Hines	1	ATNCL	Sec-121	T.D. 1420	Dry
Hi Land	1-Wilson	BBB&C	Sec-1	T.D. 1610	Dry
Holcombe-Jones	1-Taylor	Holliday		T.D. 1825	Dry
Atlantic et al		Whitaker		T.D. 929	Dry

Cooke County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Lloyd	1-Stark	Reed		T.D. 1783	Dry

Wichita County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
G. M. C. Oil Co.	1-Crudup	DCSL	League-4 Blk-10	1807-1813	9
Hines	6-Burnett	Meade	Blk-6	1387-1402	65
United Prod. et al.	1-Kemp et al.	KWVFL	Blk-28	1750-1753	156
Bulling et al	4-Jennings	HT&B	Sec-12	T.D. 1832	Dry

Wilbarger County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Consolidated	P-1-Waggoner	H&TC	Sec-21 Blk-4	T.D. 1931	Dry
Texas	363-Waggoner	H&TC	Sec-13 Blk-4	T.D. 575	Dry
Tulsa	1-Waggoner	H&TC	Sec-6 Blk-17	T.D. 2208	Dry
Barkley-Meadows	B-1-Waggoner	H&TC	Sec-17 Blk-4	2419-2435	175
Burton et al	I-4-Waggoner	H&TC	Sec-40	1857-1881	340
Consolidate	O-3-Waggoner	MEP&P	Sec-40	1853-1877	400
Knight et al	F-1-Waggoner	H&TC	Sec-21 Blk-4	1857-1875	335
Empire	B-12-Waggoner	H&TC	Sec-32 Blk-4	2287-2302	177
Empire	C-5-Waggoner	H&TC	Sec-25 Blk-4	1898-1901	175
Empire	C-6-Waggoner	H&TC	Sec-25 Blk-4	1882-1891	130
Fain-McGaha	Y-2-Waggoner	MEP&P	Sec-43	2383-2405	180
Grayback Dev.	2-Waggoner	MEP&P	Sec-40	1852-1867	101
Grayback Dev.	3-Waggoner	MEP&P	Sec-40	1862-1872	300
Knight et al	A-3-Waggoner	MEP&P	Sec-40	1854-1875	170
Lewis Prod	B-3-Waggoner	H&TC	Sec-17 Blk-4	2412-2428	370
Peckham	A-1-Waggoner	H&TC	Sec-21 Blk-4	1861-1875	414
Staley-Wynne	B-4-Waggoner	H&TC	Sec-25 Blk-4	1892-1906	125
Waggoner	L-4-Waggoner	H&TC	Sec-32 Blk-4	2344-2376	200

Young County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Bratcher	9-Edwards	Tynes		458-502	10
Kleiner et al	30-Langston	TE&L	Sec-1490	562-583	60
Robertson Drlg.	7-Gilmore	YCSL	Blk-14	T.D. 590	Dry
Steed-Gans	1-Blackman	Wilson		T.D. 657	Dry
Strahan	1-Boone	BBB&C		T.D. 550	Dry
Wise-Jackson	1-Stewart	YCSL	Blk-27	T.D. 730	Dry
Scott-et al	1-Brayer	James		T.D. 2160	Dry

PANHANDLE

Carson County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Gulf Prod.	1-Block	I&GN	Sec-111 Blk-4	3012-3117	265
Champlin	3-McConnell	I&GN	Sec-67 Blk-4	3093-3117	70
Ware et al	1-Fee	AB&M	Sec-18 Blk-3	T.D. 5141	Dry
Washoma	2-Smith	I&GN	Sec-149 Blk-3	3190-3237	180
Texas	6-Bowers	H&GN	Sec-89 Blk-B-2	2970-2975	196
Shamrock et al	1-Clayton	H&GN	Sec-50 Blk-25	2805-2811	780

Wheeler County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Martin-Pebons	1-Griswolf	H&GN	Sec-1 Blk-24	1710-1906	37M

WEST TEXAS

Crane County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Gulf Prod.	61-McElroy	CCSD	Sec-200 Blk-F	(2760-2916) (P.B. 2905)	200 19 Hrs

Pecos County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Phillips	2-Ramsey	TC	Sec-17 Blk-194	1645-1720	56
Mid-Kansas & Transc.	9-Yates	TC	Sec-32 Blk-194	1212-1381	167 (1 Hr.)
Mid-Kans. & Transc.	29A-Yates	Vacancy Strip	Sec-34½	1043-1220	6018
McMan	1-A-Smith	TC	Sec-104	1168-1293	3409 (1 Hr.)
Gulf Prod.	18-B-Smith	TC	Sec-22 Blk-194	1410-1597	350 (6½ Hrs.)
Gulf Prod.	17-B-Smith	TC	Sec-22 Blk-194	1415-1576	200 (1 Hr.)
Mid-Kans. & Transc.	7-D Yates	I&GN	Sec-62 Blk-1	1040-1287	630 (1 Hr.)
McMan	4-C Smith	TC	Sec-25 Blk-194	(1639-1704) (P.B. 1698)	60 1 Hr.
Transcontinental	2-Univ.	Univ.	Sec-9 Blk-17	T.D. 2440	Dry
Transcontinental	1-Sellman	TC	Sec-7 Blk-194	T.D. 2007	Dry

Upton County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Humble	11-Ricker	Denton	Sec-5	2342-2420	60 (12 Hrs.)

Ward County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Atlantic-Delmar	2-Hazlett	H&TC	Sec-17 Blk-5	2470-2500	140

Winkler County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Southern Crude	T88N7-Hendricks	PSL	Sec-28 Blk-26	2741-2958	500
Southern Crude	T88K7-Hendricks	PSL	Sec-41 Blk-26	2870-2873	100 (1 Hr.)
Shell	6-Scarborough	PSL	Sec-1 Blk-C22	2891-3100	175
Skelly	2-Daugherty	PSL	Sec-22 Blk-26	2639-2765	53 (1 Hr.)

Completions in North Louisiana and South Arkansas, Week Ended July 11, 1929

LOUISIANA

Caddo Parish

Company	Well	Location	Depth	Yield
Bayou State Oil Corp.	Levee Board No. 17	No. 23-22-15	1014	30 bbls.
Sam Gold	Hunter No. 1	17-19-14	2415	700 bbls.

Bossier Parish

Company	Well	Location	Depth	Yield
Woodley Petro. Co.	Whitehurst No. 6	34-16-12	1935	1M gas

Morehouse Parish

Company	Well	Location	Depth	Yield
Interstate Nat. Gas Co.	Flaming No. 2	15-20-4E	2160	20M gas

Ouachita Parish

Company	Well	Location	Depth	Yield
Ouachita Nat. Gas Co.	Smith No. 10	40-20-4E	2134	39M gas
G. E. Jordan	Rea and Green, No. 2	2-18-4E	2236	3½M gas
Magnolia Petro. Co.	Poe 401-Well No. 1	2-18-3E	2189	4⅞M gas

Union Parish

Company	Well	Location	Depth	Yield
Friend and Behan	Barr No. 1	16-20-4E	2160	11⅝M gas
Nat. Gas Prod. Co.	Hollis No. 1	14-21-5E	2190	3⅜M gas
Palmer Corp	J. W. Downey No. 2	21-21-3E	2190	3 9/10M gas

Richland Parish

Company	Well	Location	Depth	Yield
Palmer Corp	Blymes No. 4	21-17-6E	2450	7⅝M gas
Palmer Corp	Jones No. 1	22-17-6E	2452	15½M gas

LaSalle Parish

Company	Well	Location	Depth	Yield
Ark. Fuel Oil Co.	Urania No. 12	19-10-2E	1596	Salt water, abnd.

East Texas (Harrison County)

Company	Well	Location	Depth	Yield
C. H. Lyons et al.	Saye No. 1	H. M. Jenkins HRS	2382	½M gas

Arkansas (Ouachita County)

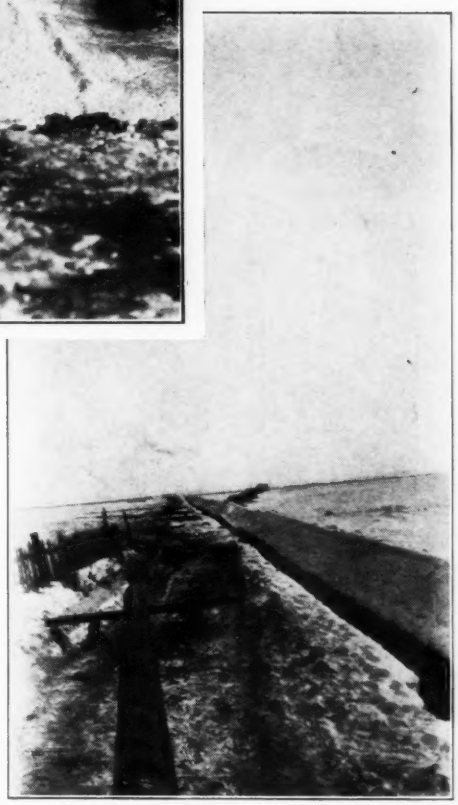
Company	Well	Location	Depth	Yield
McDonald Bros.	Wilson No. 2	25-15-18	2781	121 bbls.
Pure Oil Co.	W. E. Gregory Estate No. 1	15-17-14	3009	65 bbls.

Uinta Pipe Line

to Provide Outlet for

Big Gas Reserves in Wyoming

A stretch of the Uinta Pipe Line through Emigration Canyon, between Coalville and Salt Lake City. Picture taken early in the spring



Part of the Utah Valley is level as a floor. Between Salt Lake and Ogden

By Lawrence E. Smith
N. P. N. STAFF WRITER

SALT LAKE CITY

A VISION of years is about to be realized in this city and in Ogden, a short distance north of Utah's capital city. In August or September of this year, either George W. Crawford, board chairman, or O. D. Donnell, president, of the Western Public Service Corp., will turn the valve at the city's gate that will admit natural gas into the city's mains.

Years ago gas was discovered in the Baxter Basin structure, of Sweetwater county, southwest Wyoming. The flow was large and the rock pressure high. Subsequent drilling, following the discovery, proved a large field but one devoid, up to the present, of oil which was the original objective. With large reserves of gas established, interested companies made preliminary plans to utilize them. Tentative surveys were made to various points, Salt Lake City and its closely populated neighboring territory being the favorite objective.

There were many obstacles in the way. Some of them were natural, in the form of mountainous country which would make pipe line construction expensive. One barrier was the existence of an artificial gas company supplying the domestic needs of Salt Lake and Ogden.

About a year and a half ago the Crawford interests, who have been outstanding in the natural gas industry for many years, who control the Lone Star Gas Co. and other important companies, began with the Ohio Oil Co. to plan the present project. Since the first tentative survey was made additional gas reserves had been proved—more Baxter Basin territory, Hiawatha field, in northwest Colorado and Clay Basin, Utah. Of the supply end they had no fear.

All obstacles were cleared away in fairly short time. The problem presented by the existence of artificial gas companies in Salt Lake and Ogden was met by purchasing those companies. Now, with some 3,000 men on the payroll, the big project, involving an expenditure of between 18 and 20 million dollars, is being rushed forward so as to have it as near completion as possible while weather is good.

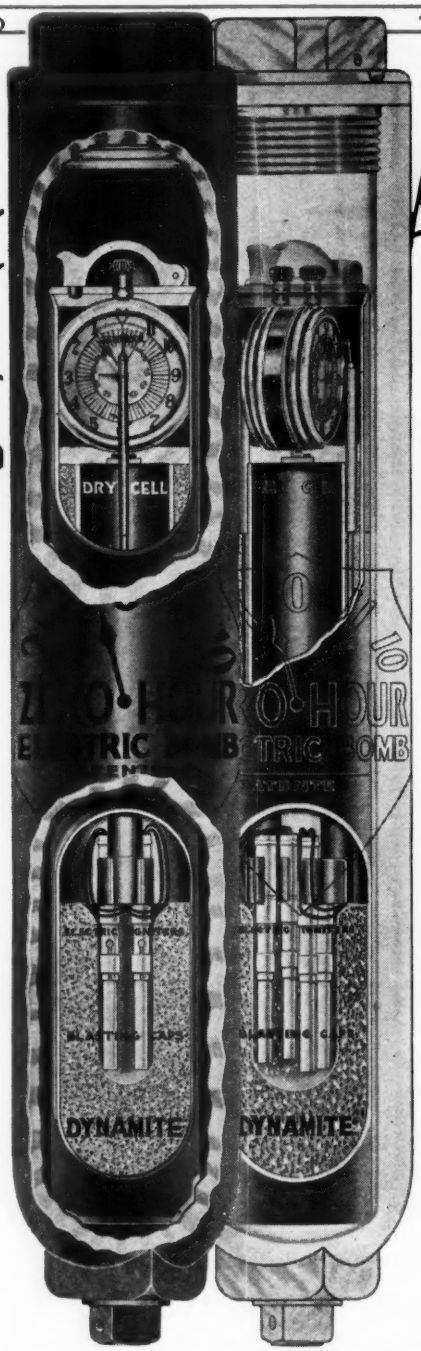
The holding company, controlling the distributing, transporting and supply companies, is the Western Public Service Corp., whose control is shared by the Crawford and the Ohio Oil interests. Originally the Producers & Refiners Corp. was a participant because of its ownership of gas acreage, but it is reported to have recently disposed of its stock to the other two.

George W. Crawford, of Pittsburgh, is chairman of the board of the Western Public Service; O. D. Donnell,

THE ONLY BOMB BETTER THAN A ZERO HOUR BOMB IS TWO ZERO HOUR BOMBS... AND THAT'S THE ZERO HOUR DUPLEX

SUPER-DEPEND ABLE..

.. this new



Zero DUPLEX Hour Electric Bomb

Plug and Socket Connectors ... Improved Firing Pin

When you take a bomb that has previously proven 98% perfect and duplicate it, in the same container, you have a bomb that, compared with the former bomb, is 99 21/100 % perfect. It is a fact that the chances of the new Zero Hour Duplex Bomb's failure to operate are so small that they are almost beyond computation in ordinary mathematics. To this extent, also, are eliminated dangerous cleaning-out jobs, over buried shots, with their attendant loss of production and burden of expense. The Zero Hour Duplex Bomb brings to oil well shooting such a perfect, modern detonating device that all other methods are rendered at once obsolete, and more costly and hazardous to your investment, by the risk entailed in using them. We are of the profound belief that no more perfect detonating device has ever been devised.

Zero Hour Bombs are obtainable through all principal torpedo companies

Every Zero Hour Duplex Bomb has a safety interval of from one to twenty-two hours.

Every watch is given several days running test, for accurate time-keeping.

Every electric igniter and every assembly of two igniters, connected in parallel to connector plug, at our factory, are galvanometer tested.

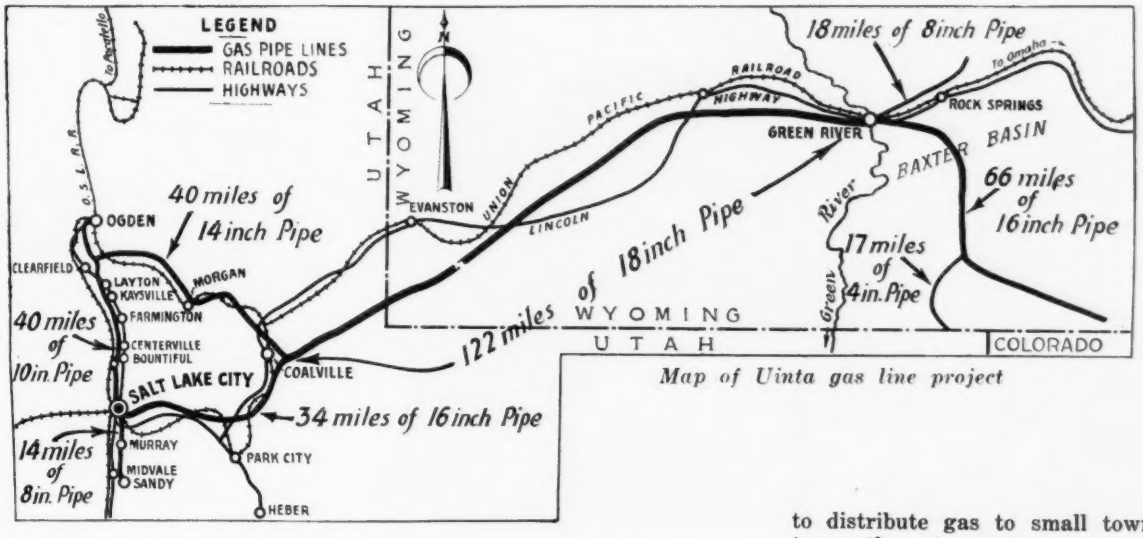
The firing mechanism of every bomb is tested, by substituting a flashlight bulb for explosive caps, first, at our factory, again at our distributing stations and, finally by the shooter at the well, just before the bomb is loaded.

New "plug and socket" method of attaching electric igniters and blasting caps simplifies loading operations and assures perfect electrical connections.

Nearly 7,000 Zero Hour Bombs have been used. Not one has fired before the time for which it was set.

Zero Hour Electric Bomb

THE ZERO HOUR TORPEDO CO., 408 COSDEN BLDG., TULSA, OKLAHOMA



Map of Uinta gas line project

Lowering pipe into the ditch

president of the Ohio Oil Co., is president; R. J. Berry, vice-president of the Ohio, and T. B. Gregory, of the Crawford interests, are vice-presidents. Mr. Gregory is the treasurer. The assistant treasurer and assistant secretary is F. B. Firmin, formerly of the Ohio. D. E. Mitchell, of Pittsburgh, is secretary and assistant treasurer and E. B. Redpath, of the Ohio, is assistant treasurer and assistant secretary.

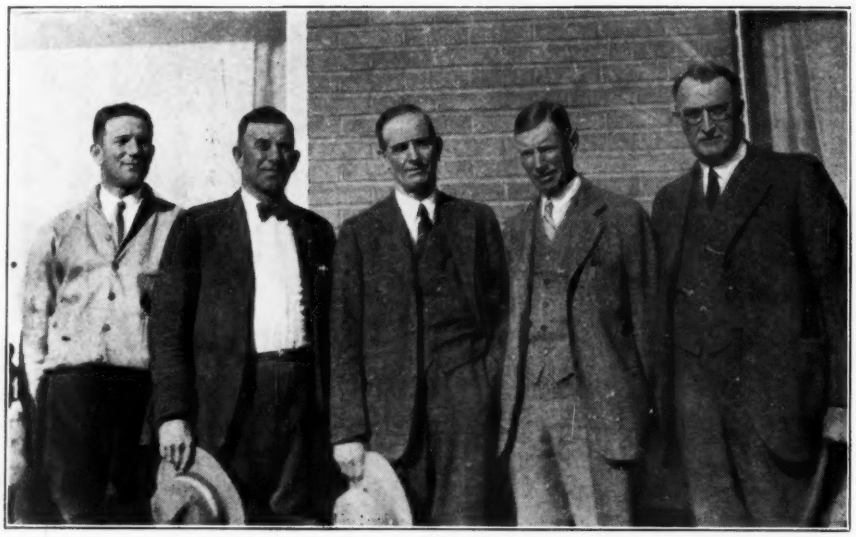
The transportation company, owning the trunk line from the field to the city limits of Salt Lake and Ogden is the Uinta Pipe Line Co. W. A. Miller, president of the Illinois Pipe Line Co., is president; E. B. Redpath and Frank McCarthy—the latter formerly of the Producers & Refiners Corp., vice-presidents; E. B. Redpath, secretary and F. B. Firmin, treasurer. W. B. Filson and G. E. Pleasants are assistant secretaries and Mr. Filson is assistant treasurer.

The Wasatch Gas Co. was organized to own and operate the 53 miles of line between Salt Lake and Ogden and to distribute gas to small towns between these two points and elsewhere in the environs of the two cities. L. B. Denning is president; L. Fitzpatrick, formerly of the Ohio Oil Co., is vice-president and general manager; T. B. Gregory, R. J. Berry and J. D. Roberts, who formerly was with the Lone Star Gas Co., are vice-presidents. David E. Mitchell, formerly of the Columbia Gas & Electric Co., is secretary and assistant treasurer; F. B. Firmin is treasurer and assistant secretary and L. C. Olpin is assistant secretary and assistant treasurer.

The Utah Gas & Coke Co., formerly owned by the Insull interests, distributes gas within the city limits of Salt Lake. Its officers are the same as those of the Wasatch company. Reconstruction and enlargement of the system through which artificial gas was distributed, is under way.

The Ogden Gas Co. was one time controlled by the Electric Bond & Share Co., later acquired by the Insull interests and sold to the Western Public Service Corp. It distributes gas within the city limits of Ogden. Its officers are the same as those of the

Welding gang at work on the Wasatch line



Some of the interested parties. Left to right, L. P. Frey, of the A. O. Smith Corp.; C. R. Hetzler, vice-president, Mountain Fuel Supply Co.; John McFadyen, president, Mountain Fuel Supply Co., and vice-president, Ohio Oil Co.; George E. Perdunn, Wasatch Pipe Line Co., and W. A. Miller, Sr., president, Uinta Pipe Line Co., and president of the Illinois Pipe Line Co.

Wasatch and Utah Gas & Coke companies.

The Mountain Fuel Supply Co. is the producing subsidiary of the group. It will own and lease acreage, buy production, construct gathering lines and drill new wells. John McFadyen, vice-president and director of the Ohio Oil Co. in charge of Rocky Mountain and California activities of that company, is president of Mountain Fuel. C. R. Hetzler, formerly of the Ohio, is vice-president; L. M. Kiplinger, of the Ohio interests, is secretary and treasurer and N. L. Battenschlag, formerly of the Ohio, is assistant secretary and assistant treasurer.

The writer made the trip by Casper to Salt Lake by automobile. The road from Rawlins to Salt Lake is the Lincoln Highway, in good condition most of the way. It leads through Rock Springs, principal coal mining center of Wyoming, where the Mountain Fuel Supply Co. has its operating headquarters—Baxter Basin gas fields being nearby—through Evanston, chief town in the southwest corner of Wyoming, across the Wasatch Mountains.

Emerging from the mountains along a splendid highway, the traveler comes suddenly upon a breath-taking view of the Utah Valley, in the middle of which lies Salt Lake City. It is easy to understand, looking at the fertile and intensively cultivated valley, the remark attributed to Brigham Young when he and his brave colony of emigrants first paused to look it over, "This is the place."

The territory which will be served holds about 50 per cent of the entire population of Utah. Salt Lake City, a progressive, growing center, has with the contiguous small towns, about 175,000 population. Ogden has about 45,000 people and other small centers to be served account for some 15,000 more. Thus, a domestic consuming public of about 235,000 people lives in the natural territory on the termini of the trunk lines.

A large industrial field awaits the coming of natural gas. Most important in the industrial life of the community are the large copper smelters. In addition there are large brick and cement plants, canning factories and a variety of smaller industries.

Frank McCarthy, in charge of construction, Uinta Pipe Line Co., and vice-president of that company

An accompanying map shows the lengths and sizes of the lines that make up the system. At the time of the writer's visit the Wasatch line, between Ogden and Salt Lake, was completed although there remained to do much new construction and rehabilitation of the distributing systems in the two cities. The systems in the several towns between the two cities had been completed.

The line from Coalville, where the main line branches to Salt Lake and Ogden, was nearly completed as to the Salt Lake prong and was about half finished between Coalville and Ogden. About 60 miles on the main 18-inch trunk between Coalville and Green River, Wyo., was completed and five gangs were working.

The line from north Baxter Basin to Green River was completed and gas turned into the distributing system in Green River which, with Evanston and a few other small towns along the main trunk will be supplied. The line from Green River to the South Baxter and Hiawatha fields was completed. No work has been done on the supply line to the Clay Basin field in Utah, as this reserve will not be needed immediately.

The construction has involved no unusual engineering feats although considerable difficulty has been met with on account of bad weather and mountainous country. At two places the line crosses elevations of around 7,600 feet. One such point is on the line that runs to south Baxter Basin and the other is where the trunk line crosses the divide of the Wasatch range about eight miles out of Salt Lake City.

The worst pipe line country, perhaps, was that in Weber canyon, from Coalville to Ogden. This is a narrow canyon which already contained a railroad and a highway besides a swiftly running stream. The pipe line people had to use whatever foothold they could find, hence, in running this stretch they made 14 river and 16 railway crossings. The stream has a good rock bed and no great difficulty was encountered except from the standpoint of time and money consumed.

Near Coalville a huge reclamation project, Echo Dam, is under construction. The pipe line route here crosses on the berm of the dam and will be under water for about two miles, although along the edge where water will be only two or three feet deep.

The Uinta Pipe Line Co.'s part of the project is using A. O. Smith Corp. electric welded pipe throughout and is using that manufacturer's patented expansion joint. On the Wasatch line between Salt Lake and Ogden, National Tube Co. seamless pipe is being used. It is a welded job all the way.

No compressor stations are being built at this time. With high rock pressures in the fields of supply, it is believed that stations will not be needed for at least a year and perhaps longer.

Domestic rates have been announced by the companies. For Salt

Lake, Ogden and other Utah towns they are as follows:

First 400 cu. ft. or part 90c
Next 600 cu. ft. 15c per 100 cu. ft.
Next 1000 cu. ft. 12c per 100 cu. ft.
Next 1000 cu. ft. 7½c per 100 cu. ft.
Next 2000 cu. ft. 6c per 100 cu. ft.
All over 5000 cu. ft. 5c per 100 cu. ft.
Minimum bill 90c

To the southwest part of Wyoming this project is of high importance. It affords a market for large quantity of shut-in gas and a future market for other gas fields which may be discovered. The Baxter Basin fields are as yet undefined but promise to yield huge volumes for years. North Baxter has only one well, producing from the Dakota formation; Middle Baxter is to be tested this year while South Baxter, the discovery field of the district, has nine or 10 wells.

The Hiawatha field, near the Colorado-Wyoming line, has four producing wells. Rock pressures in the Baxter fields range from 850 to 1,050 pounds; the same is true of Hiawatha while Clay Basin, Utah, with one well around 5,400 feet deep, has rock pressure of 2,100 pounds. This well is just in the top of the sand and initially showed a volume of about five million cubic feet daily.

It is expected to be much larger when deepened. As it is in a small hole at that depth, it will be deepened by diamond drilling. Part of the material for this purpose is now on the ground.

Gas Pipeline to El Paso Built From Jal, N. M.

Staff Special
HOUSTON

CONSTRUCTION work has been completed on the El Paso Natural Gas Co.'s new pipeline from the vicinity of Jal, Lea county, New Mexico, 205 miles to El Paso. The system, which has a present capacity of 35,000,000 cubic feet of gas daily, will serve El Paso industries and provide domestic gas to be distributed through the Texas Cities Gas Co.

Wells drilled by The Texas Co. and other operators in Lea county have established a reserve of hundreds of millions of cubic feet daily, possible gas production. Most of them remain shut in, lacking outlet. The Texas Co. was the first to connect to the newly completed El Paso line.

Many wells drilled in Lea county, where oil production has been negligible so far, test from 20,000,000 to 100,000,000 cubic feet of gas daily. Some make sweet gas and others produce a sulfur product requiring treating to make it merchantable.

Operation of the new pipeline was delayed somewhat pending agreement with the federal government on the marketing of gas from permit lands on which discoveries had been made but leaseholds had not been validated. Agreement has now been reached for the marketing of gas, but the question of royalties to be paid the government has not been entirely adjusted.

The desert character of the country traversed by the gas pipeline from Lea county, New Mexico, to El Paso, gave a severe test to its builders. Rapid progress was made, however, despite the handicaps of sandstorms and other natural obstacles.

Construction was carried forward entirely by electric welding employing the metallic arc. The pipe used was fabricated by that method in the plant of the A. O. Smith Corp., in Milwaukee, and the recently announced SMITH welded expansion joints were employed in line construction.

In construction the 30-foot lengths of pipe are described as first joined into sections of five to six lengths, usually seven, by tack welding. They are then welded by "firing line welders," the pipe being turned by tongs as the operation progresses. "Firing line" welders average 13 completed welds every 10 hours.

Sections are then joined by the "bell hole method," in which a hole is dug for the welder, who works completely around the pipe as it rests stationary over the ditch.

General Electric, Lincoln and Fuzon welders were used on the line. The last mentioned is a mobile outfit, mounted on pneumatic tires with standard Ford wheels made by the Fusion Welding Co., of Chicago. It proved of special popularity with "bell hole" welders because of its quick transfer at automobile speeds.

The value of protective coating which surrounds the arc with a stable atmosphere was strikingly illustrated by the recent testing of a number of welds made under sandstorm conditions. The results obtained are described as uniformly satisfactory.

Construction work was expedited by its being laid out in advance, the operations split up and the crews organized much in the same manner as modern factory planning.

Inspection was handled by a firm of engineers, who took two portable milling units and a tensile testing machine into the field. Welds were subjected to particularly severe testing in the early stages of construction with special reference to the selection of the rod used. Continual tests of both pipe and welding equipment were made as the line was being laid.

Deep Well Still Produces

DENVER—Continental Oil Co.'s No. 17 Rattlesnake dome well in northwest New Mexico which earlier this year found an unexplored horizon in the Pennsylvanian formations, is producing about 750 barrels of oil and 1200 barrels of water daily. Top of the pay horizon was found at 6771 feet and it was drilled three feet into this formation.

Transporting Fuzon-type welder over desert region of West Texas, traversed by pipeline

Economies In Small Well Production

Part Two

Importance of Individual Well Gauging, Cleaning Out, Heating and Treating

By Allison C. Dyer*

Presented before Los Angeles Meeting, June 26-28, California Branch, Division of Production and Development Engineering, American Petroleum Institute

THE first portion of this paper, published in July 10 issue of NATIONAL PETROLEUM NEWS, described a basic theory of lifting oil in small wells of settled production, in which the importance is recognized of retaining in the oil until it reaches the surface the occluded gas and gas in solution in the oil in the ground.

In the practical application of this theory new equipment in use in pumping wells in California is described.

THE gauging of oil can be considered under three separate and distinct headings: shipping, royalty, individual well gauging.

The gauging of oil under the first heading contemplates a property completely owned and operated by one company or group. It is also presupposed that this company or group desire to know only the amount of net oil and water produced on the property in its entirety. In this case the oil is gauged or measured directly in the shipping tanks.

These tanks are strapped or calibrated, and the oil is allowed to stand in them until the free water settles out and the occluded gas more or less driven off. Sometimes it is necessary to heat the oil in order to accomplish this, and steam coils are laid in the tank. Although the mechanics of measuring this oil are familiar to everyone, they will be briefly summarized here for comparative purposes later on.

After the free water has settled out of the oil it is bled off. A high gauge is taken of the oil and the temperature of the oil is noted. By means of a thief sampler a one-quart sample of oil is taken, one-third of which is obtained from the top of the oil, one-third from the middle and one-third from the bottom.

This sample is run for gravity, and emulsion and water cuts. The volume of oil at the high gauge is calculated and the emulsion and water ratios applied. The volume is converted to volume at 60 degrees F. After the oil has been discharged into the shipping lines a low gauge is taken of the remaining oil and its volume computed in the above manner. This volume subtracted from the original volume gives amount of oil shipped.

Royalty Gauging

It oftentimes happens that overriding royalties apply to a certain portion of a property. This portion may be so small that the erection of separate shipping tanks is unwarranted. It is then necessary to install gauge tanks in order to measure this royalty oil. Sometimes operators get around the necessity of installing tanks by holding a five gallon can under the lead line and noting the time it takes to fill but this method is so inaccurate that it will not be discussed here.

The gauge tank equipment must be of sufficient capacity to accommodate all the oil which flows (preferably for a period of 24 hours) from the portion of the property in question. The mechanics of gauging the oil are essentially the same as discussed under heading No. 1 with the exception of the heating facilities which are too expensive to be used as a rule.

Individual Well Gauging

The importance of individual well gauging is realized by the best operators. A study of the quantity and quality of the production of each individual well on a property benefits the operator in many ways, chief among which is a better knowledge of subsurface conditions. A true knowledge of subsurface conditions is essential to the economic operation of any property and a constant study of the individual well production will reveal most of these conditions chief among which are:

(a) Subsurface faulting or discordance at the producing horizon.

(b) Edge-water encroachment.

(c) Failure of water shut off.

(d) Improper pumping speed.

In order to be of full benefit the gauging must be continuous. Ample gauging equipment should be installed at each well and observation made often enough that the operator is sure his information is correct. It has been the custom in the past to in-

*Assistant petroleum engineer, U. S. Geological Survey, Taft, Cal.

RESULT OF SEVEN DAYS' TEST BY GRAVIMETRIC GAUGING

Appendix 4

	OIL (BBLS)		WATER (BBLS)		TOTAL FLUID (BBLS)		PERIOD	% FREE WATER	
	Tank	Meter	Tank	Meter	Tank	Meter	Run	Meter	Tank
May 9	27.0	26.9	55.2	54.0	82.2	80.9	24 hours	66.8	67.0
May 10	27.0	26.7	50.0	50.4	77.0	77.1	24 hours	65.4	64.9
May 11	20.25	19.6	41.3	41.6	61.55	61.2	18 hours	68.0	67.4
May 13	27.37	25.4	49.2	51.7	76.57	77.1	24 hours	67.0	64.2
May 14	25.20	26.3	51.8	51.0	77.0	77.3	24 hours	67.0	67.3
May 15	25.3	26.8	50.7	49.7	76.0	76.5	23½ hours	65.0	66.7
May 16	25.2	26.3	47.9	47.5	73.1	73.8	23 hours	64.0	65.5
Total	177.32	178.0	346.1	345.9	523.42	523.9			
Error bbl.	0.68 plus		0.2 plus		0.3 plus				
Per cent error	0.38% plus		0.06% minus		0.09% plus				

stall individual gauge tanks at each well. This method was of a necessity expensive but had it been accurate, the valuable nature of the information obtained would have warranted the extra expense.

However, difficulties were encountered which were impossible to surmount by the volumetric methods. For one thing in gauging the live oil at the well, the volume is invariably swelled by occluded gas. By the time this oil reaches the shipping tanks this gas is driven off and the volumes do not check. Another difficulty was the gauging of sandy oil. Either the gauge tanks had to be frequently cleaned or the oil was run into sumps to drop its sand. In the latter case it would take double handling to gauge it.

Again if the water content were high the gauge tank capacity had to be several times that necessary to gauge the oil alone.

In order to overcome these difficulties the theory of gravimetric gauging was applied and an apparatus designed to function under this theory.

The results so far have been very satisfactory. It was found possible, not only to gauge the oil at the well correctly, but to obtain a much better cross-section sample than was possible under the volumetric methods.

Gravimetric Gauging

The gravimetric gauger and sampler consists of two triangular shaped bins welded back to back, their union forming a dividing partition between them. Along this central dividing partition and about three inches up from bottom is the axis. The bins are free to revolve about this axis through 90 degrees. The center of gravity of the empty bin is about three inches further up along the central vein. Thus either one bin or the other is always in position for filling. When a predetermined weight of liquid is in the bin it swings about the axis, discharging its contents and brings the other bin into position for filling. The operation is then reversed. A counter, mounted on the axis, registers the number of dumps.

The density of the liquid measured has no effect on the weight of liquid discharged, as the center of gravity of any liquid lies along a vertical line which is fixed with reference to the center of gravity of the empty bucket and the turning axis.

At the top of the center dividing wall is the sampler. This sampler cuts through the lead line flow each time a bin discharges and conducts a small portion to the sample jar. This sample jar is counter-balanced so that, when it is full, it swings out of the sampling circuit.

E. P. Campbell, Petroleum Engineer of the Standard Oil Co. has recently concluded some tests to determine whether the sample taken by the sampling device was a true cross-sectional sample of the total production, and also to check the metering against gauge tank volumes.

The gauge tanks were carefully calibrated and the oil was allowed to remain in them long enough to exhaust its occluded gas.

The results of a seven days' run are shown in Appendix 4, and show the volumes to check within six-hundredths of one per cent.

Another interesting test was made by the General Petroleum Corp. under the supervision of Max App, division superintendent.

A 30-day test was made on Well No. 20, Sec. 14, T. 28 S., R. 28 E., Young Lease, Kern River Front. This Kern Front oil carries as much as 60 per cent by volume of occluded gas, which renders it extremely difficult to gauge volumetrically at the well, before it is heated and the free gas driven out.

The test was conducted in the following manner: The lead line production was run into a gauge tank every third day and allowed to settle for two days before gauging. The alternate two days the lead line production was run through the gravimetric meter. In this way a total of 10 days production was gauged in the tank and 20 days in the meter on the 30-day test. The results are tabulated in Appendix 5, and showed a maximum range in volumes through the meter of two barrels, while the volumes in the tanks showed a range of 12 barrels. Also the meter quantities were consistently lower than the tank quantities.

As the well was apparently producing at a normal, steady rate during the 30-day test, the gravimetric meter was accepted as being more accurate than the gauge tank on this test. The difference obtained by the two methods of gauging also accounted for a shortage of oil which was invariably suffered in their shipping tanks as compared with their well gauges.

Besides the greater accuracy obtained by the gravimetric method, this method recommends itself from the standpoint of reduced gauging costs per barrel of oil produced. A well can be equipped with adequate gravimetric gauging facilities much cheaper than with volumetric facilities of corresponding capacity.

COMPARISON OF GRAVIMETRIC METER AND GAUGE TANK TESTS

Appendix 5

Gravimetric Meter
—20 days production—Maximum prod. 78 bbl. daily
Minimum prod. 76 bbl. daily
Average prod. 77 bbl. daily
Maximum range 2 barrels

Gauge Tanks
—10 days production—Maximum prod. 94 bbl. daily
Minimum prod. 82 bbls. daily
Average prod. 86 bbl. daily
Maximum range 12 barrels

PULLING AND CLEANING OUT

Operations

When the old band-wheel equipment is replaced by the more economical individual pumping units, the rigs are "bobtailed." That is, the standard cable end is removed, leaving only the tower. This necessitates the use of a portable outfit for pulling and cleaning out operations. There are many of these outfits on the market ranging all the way from a power winch on a truck to massive units capable of handling the deepest of small wells. The trend in pulling and cleaning out operations is, as in other phases of production, towards greater economy of operations. A notable example of this trend was recently brought to the writer's attention by the production engineers of the Union Oil Co.

The engine clutch control level was moved to a position alongside of the bull wheel brake lever, thus enabling one man to operate both clutch and brake. This arrangement not only saves one man but permits of greater speed through the more perfect co-

COST OF SPECIAL PULLING AND CLEANING OUT EQUIPMENT

Appendix 6

	Labor	Material	Total
Rearrangement of clutch control	$ 15	$ 10	$ 25
Note: (If this work had been done originally the cost would have been no greater than under the old arrangement).			
Drilling and Casing Hole	100	215	315
Two Speed Drum	100	94	194
Total Cost	$215	$319	$534

ordination of clutch and brake. A high speed drum was installed on the bull wheels to give greater cable speed.

At the same time a "Rod Rat Hole" was drilled. This is a 90-foot hole cased with 30-inch corrugated iron pipe. Over the top of the hole is a head made to act as a rod rack. The top of this rack is at the same level as the top of the tubing.

When pulling the rods one man wrenches the rod and guides it into the rate hole, setting it on the rack and unhooking the elevators. This arrangement eliminates the derrick man.

The weight of a stand of rods is on the hook on the return trip, hence greatly increasing the speed of the hook when returning for the next stand.

With the above described equipment it is possible for two men to pull a 3500 foot string of ¾-inch rods in 50 minutes. With the old style equipment it takes four men one hour and ten minutes to do the same job.

The cost of this equipment is not excessive and is detailed in Appendix 6.

HEATING, TREATING AND SHIPPING OIL

After the crude oil is gauged at the well, it must go through one or more stages before it gets into the shipping line, as pipe line companies will accept clean oil only.

The simplest case is where clean, low viscosity oil is produced at the well and gravitated direct to shipping tanks. As no heating is required, it can be allowed to settle a short while if necessary in order to eliminate occluded gas, then gauged and shipped. The cost of handling such oil from the well to the shipping line is very low, particularly where electric motor driven shipping pumps are used, thereby avoiding the attendance of an operator. Costs as low as one-half mill per barrel, have been noted.

Free water in the oil can be bled out at the shipping tanks or intermediate settling tanks, without heating, on oils of 20 degree gravity or over.

On the lower gravity viscous oils, it is usually necessary to heat the oil in order to ship it. However, in some cases this can be eliminated or at least materially reduced by using motor driven pumps of the twin screw type, instead of the reciprocating piston type.

Where it is necessary to heat oil for shipping, substantial savings can be effected by using systems of hot water heating which have been developed in recent years. These systems use pressure drums filled with water to which direct heat from an oil or gas flame is applied. The oil to be heated is circulated through coils in the drum. This system will economically reduce the viscosity for shipping and also reduce the surface tension sufficiently to drop out free water and even break down the more unstable emulsions.

The problem of treating emulsified oils is extensive, and will only be touched on here. The costs vary a great deal depending on the type of emulsion and the method used. In one case, brought to attention recently, a rather unstable emulsion is successfully treated at a cost of only $1.20 per 1000 barrels. Formerly this oil was cleaned by steam heating coils in a 2000-barrel tank, but it was necessary to maintain the oil at 180 degrees F., for three to four days, which proved quite expensive.

A spider of 1-inch pipe was placed in the bottom of the tank. This spider formed a closed coil, and one-eighth-inch holes were drilled in the pipe on 6-inch centers. After bringing the 2000-barrel tank of oil to 180 degrees F., gas at about 50 pounds pressure was turned into this spider for a period of one to two hours. The agitation and possible reduction of surface tension caused by this gas broke down the emulsion and the free water readily settled out. Only 12 cubic feet of gas was used per barrel of oil treated.

A very common and economical method of treating emulsified oils is by electrical dehydration, but, unfortunately, this method is not adapted to all types of emulsion.

One of the most stable emulsions ever encountered, and which is very difficult to break down, is produced by certain shallow wells in the Midway District, California. The first centrifuge cut on this oil shows 16 per cent emulsion, with oil as the dispersed phase. By adding demulsifying agent, the second centrifuge cut shows 30 per cent free water, indicating a two-range emulsion, in one of which the oil is the dispersed phase and in the other range the water is the dispersed phase and the oil the continuous phase. This oil is being successfully treated in a low pressure still, direct heat from a gas flame being supplied to a pipe coil through which the oil is circulated. A temperature of 230 degrees is required. The fuel consumption is 160 feet of gas per barrel of oil treated, and the total cost approximates five cents per barrel of clean oil.

Where small quantities of emulsified oil are to be treated, such as a few widely separated wells producing emulsion, it is advisable to use some of the well-known chemical demulsifying agents on the market which have proven successful. The cost of this method generally precludes its use on large quantities of emulsified oil.

One of the most difficult problems in cleaning oil is presented by certain low gravity, viscous oils which carry large quantities of sand. This oil is usually pumped into sand sumps, where the sand settles out and the oil drains into an oil sump. However, this method is objectionable, as a cubic yard of this sand will retain as much as a barrel of oil, which is lost, and furthermore the oil in the oil sump becomes dead and tarry, making it extremely expensive to handle. Some of the oil standing in sumps in the Midway District of California, will, in the winter time support a two-inch steel ball for a minute before the ball sinks out of sight. The problem of cleaning this oil of sand and getting it into the shipping line, economically, has not been solved, but experiments are being conducted at the present time along this line. Other experiments to date indicate that the amount of sand produced can be reduced 50 per cent to 75 per cent by the adoption of slow-speed, constant velocity pumping equipment.

In conclusion, it is believed operating costs on the average small well can be reduced 60 per cent by the adoption of modern methods and improved equipment, and further reductions in operation costs can be effected all the way down the line until the oil is delivered in the shipping line. During the present period of low prices for crude oil, it is imperative that operating costs be reduced to a minimum, and if we are fortunate enough to enjoy higher prices in the future, the adoption of more efficient methods now will assure greater profits at that time.

(The End)

St. Louis Line Progressing

HOUSTON, July 12.—Approximately 20 per cent of the work has been carried forward in building the new 575-mile gas pipeline of the Mississippi River Fuel Corp., from the Monroe, Louisiana, district to St. Louis. More than 50 miles of 22-inch line has been laid and back-filled; 168 miles of pipe has been unloaded and is ready for the six construction crews engaged in the work.

Laying of the line was started late in May after clearing of the right of way. Some delay was occasioned by high waters in northern Louisiana and in Arkansas. It is estimated, however, that the line can be finished and tested by Nov. 1, ahead of the original date proposed for its completion.

Members of the syndicate composing the Mississippi River Fuel Corp. are the Standard Oil Co. of New Jersey, Electric Bond & Share Co., Columbian Carbon Co., United Carbon Co., and the United Gas Co., the last mentioned corporation combining the various members of the Moody-Seagraves group of Houston.

Filling Shot Hole with Gravel Reduces Trouble from Sand and Cavings

By John Power
N. P. N. STAFF WRITER

OIL HILL, Kan., July 11

THE practical elimination of trouble due to cavey shot holes, and resulting in a saving of 4½ cents per pumping hour, has resulted from filling the shot holes with screened gravel and pumping the wells through a liner.

The experiment, tried by the Empire Oil & Refining Co. on wells in the Haverhill pool near El Dorado, was first attempted on wells giving considerable trouble due to cavings from above the casing seat, where the shoulder was gone. So successful was it that the method will in all probability be tried in wells in which the sand has a tendency to cave or heave. During the filling of the shot holes with the gravel considerable information of value concerning size of the shot holes and effect of the shots was also obtained.

In all, four wells have been gravelled by the Empire. The first to be so treated was the Brandenberger 2 "A," in the Haverhill pool. The well had been shot with 100 quarts of solidified glycerin at 2720-2745 feet, an average of four quarts per foot shot. Filled with screened gravel, varying in size from ½-inch to 1-inch, the volume of the hole was found to be 225.1 cubic feet, giving the shot hole an average diameter of 3.026 feet.

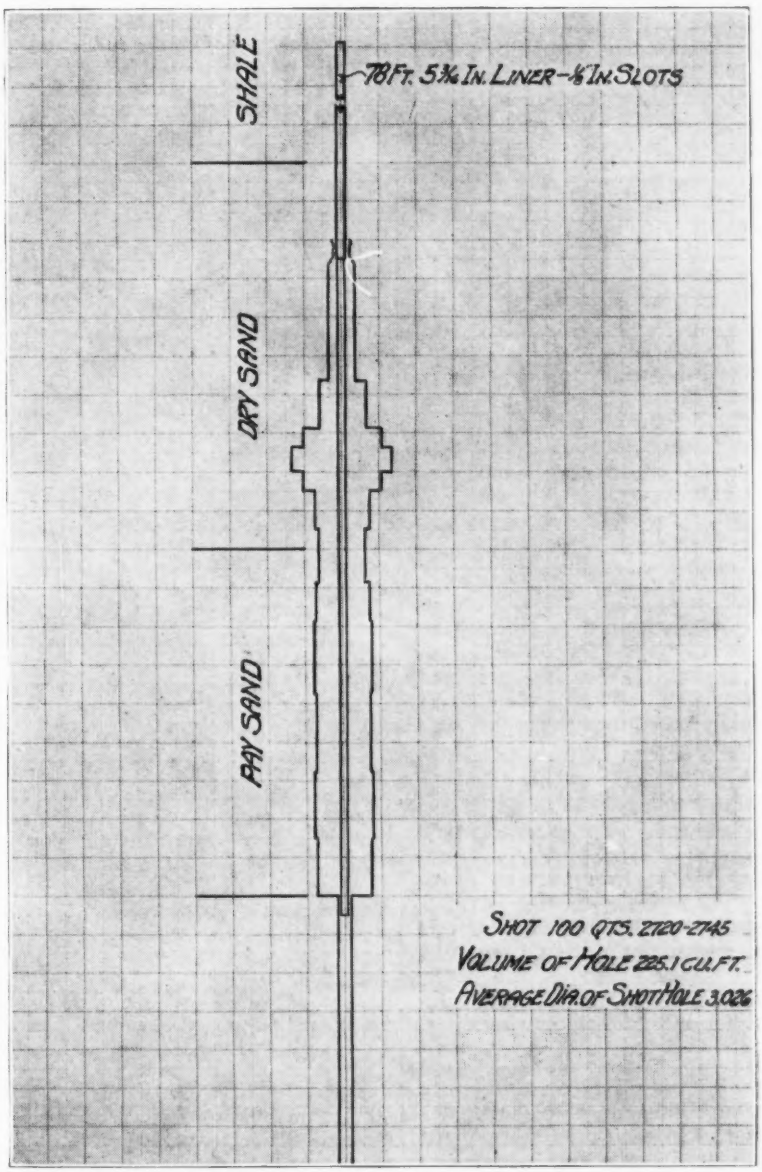
When the well was shot the casing shoulder at 2714 feet had been lost. The shot hole kept filling with cavings from behind the pipe, making it practically impossible to keep the well on production. It was then decided to try the gravelling experiment. The hole was cleaned out and kept on bottom for 24 hours. Then the gravel was put in, ¼-yard at a time. Each quarter yard was put in slowly, by shovelfulls to keep the gravel from bridging.

When each quarter yard had been put in the tools were run in the hole and the gravel tamped. Each time before running the tools the bailer was run once to bottom to make sure that the tools would follow, and not get ahead of any gravel.

Measurements were taken after each quarter yard of gravel had been tamped, the difference in the successive measurements being taken as the length of the hole filled. With the length of the hole and the volume known, the diameter was figured using the formula: Diameter equals twice the square root of the volume divided by the length times 3.1416, where length is considered the amount of hole filled by each quarter yard.

When the entire shot hole had been filled, and enough gravel put in to stand up a short way in the pipe, a $5\frac{3}{16}$-inch liner was set on top of the gravel. Smaller tools were then run, and the hole drilled ahead again through the liner. The liner followed the tools as the new hole was made, giving no trouble from this source on any of the wells so treated. The pitch of the liner shoe, which was inward, aided the progress of the liner through the gravel.

After the wells are thoroughly cleaned out, it takes about two days to complete the gravelling job. Two hours approximately is required to run and tamp each quarter yard of gravel. By making haste slowly, in


SHALE
78 FT. 5⅜ IN. LINER-⅛ IN. SLOTS
DRY SAND
PAY SAND
SHOT 100 QTS. 2720-2745
VOLUME OF HOLE 225.1 CU. FT.
AVERAGE DIA. OF SHOT HOLE 3.026

A plotted shot hole, typical of the results obtained in the gravelling experiments of the Empire in the Haverhill pool, near El Dorado, Kansas

none of the four wells treated did the gravel poured in at the surface bridge on the way down.

With the entire shot hole filled with the gravel, through which the fluid passes easily into the pipe by means of a perforated joint in the liner, the well is put on the pump, and handled in the orthodox manner. With gravel packed in between the walls of the hole and the liner, sand cavings can not get into the hole, and with the gravel packed up to the bottom of the casing, extending up a little between the casing and the liner, cavings cannot fall down from above. The coarse size and loose packing of the gravel permits the easy and unobstructed passage of the fluid into the casing.

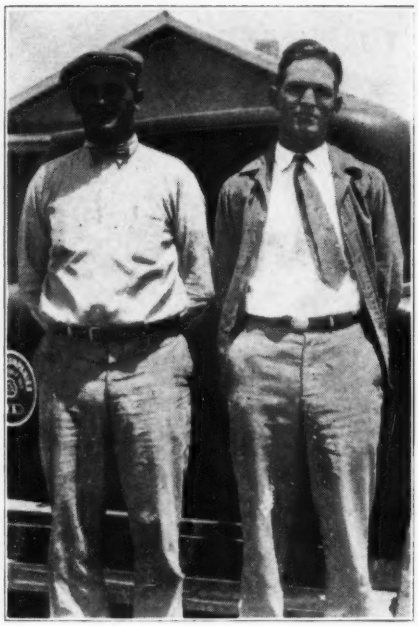
It is considered that at least a year must elapse before the full value of the experiment can be determined. It can have, of course, no material effect towards increasing the daily production, though it is probable that the wells so treated will show an increase in overall production due to lessened down time for pulling jobs caused by cup and valve trouble. The first well was gravelled last December.

However, on the evidence so far gathered since the wells were treated, there is a marked improvement in the amount of operating trouble. Typical of the wells gravelled is the Empire's Brandenburg 2-A (all wells gravelled so far have been in the Haverhill pool). During a period of which 156 hours actual pumping time was recorded prior to the gravel treatment, there were 36 hours of outage due to valve and cup trouble, or a lost time of 23 per cent. During a period of time following the gravel treatment when the well was on the pump for 4272 hours, no outage was registered against the well for cut or valve trouble.

The saving of 4½ cents per pumping hour which Empire engineers figure is due to the gravelling represents a saving of some 56 per cent of the per well pulling costs in this area. About $175 was the average cost of each well treated, computed with contracted tools.

With the company tools, a cleanout job generally costs about $750 on wells in this area. With the saving of even one clean out job every three years, plus the saving in pulling jobs, lost production and cup and valve maintenance, the gravelling method is looked upon as one which is likely to pay its way in wells giving trouble due to hole cavings.

Some interesting things were learned concerning the effect of shots during the filling of the shot holes with gravel. In each case the amount of gravel put in was carefully measured, and the differences in the bottom hole measurements were also carefully recorded. The diameter of the holes having been computed as explained, the shot holes were plotted to scale. A reproduction of one of the typical wells appears with this article.



C. P. Conover, foreman of outlying Kansas districts for the Empire, and Sam Harlan, of the production engineering department. Under the supervision of these men the gravelling experiments were carried on

All wells were shot with the solidified type of explosive, using an average of a little less than four quarts per foot shot. The average diameter in the shot holes was found to be about 2.5 feet. The shape of the hole was in all cases found to be most irregular, although the sand body of the Haverhill pool is considered fairly regular, there being some shale mixed with it, but hard streaks being unusual.

A method similar to this was discussed before the American Institute of Mining and Metallurgical Engineers in February, 1925, by Lester C. Uren, Professor of Petroleum Engineering at the University of Southern California, and contributor of technical articles to NATIONAL PETROLEUM NEWS. Professor Uren suggested the method as advisable in wells with large, loosely cemented sand bodies where it was deemed feasible to enlarge greatly the diameter of the shot hole.

Spanish Oil Monopoly Pays 6.5 Per Cent

WASHINGTON, July 11.—In the first full year of its existence the Spanish petroleum monopoly earned enough on its operations to pay 6.5 per cent as dividend. That is according to the figures made available to Commercial Attache Charles A. Livengood, at Madrid, and reported by him to the Department of Commerce.

The year ended May 31. In that twelvemonth—the first few months of the monopoly's existence since January 1, 1928, not being taken into the account—the monopoly brought an income to the state treasury of 110,000,000 pesetas, a peseta having a par exchange value of 19.3 cents. In addition it has paid a dividend of 2,500,000 pesetas on the free shares, that is shares not held by the Spanish government.

The Spanish monopoly believes in strong statements in its advertising matter. No American oil company would be able to "get away with" such an advertisement of its lubricants as was recently put out by Compania Arrendentaria del Monopolio de Petroleos (S. A.), the lessee Petroleum Monopoly Co. which has declared dividends amounting to 6.5 per cent on its first year's business. The English translation of one of its recent advertisements reads as follows:

"Automobilists! Select the best of the types indicated for lubricating your car. Upon using them, you will note a saving of 40 per cent over all others on the market and keep your car in first class condition. Our Monopoly types, packed in lithographed cans, strapped, are the best and cheapest on the Spanish market. Sold by leading dealers, service stations, garages and firms authorized to sell lubricants."

The fact that the monopoly feels it necessary to advertise its lubricants in such a fashion in this country is taken to indicate that that company has a monopoly only in name. In fact United States Consul Maurice L. Stafford, stationed at Madrid, in a report dated April 20, said "it is a question whether the operation of the monopoly has seriously affected American gasoline and oil trade, as these commodities are still imported in considerable quantities from the United States."

Stafford, in that report, reviewed the establishment of the monopoly, the operations thereof and the question of pay for the expropriated properties. In addition to the part of his report quoted above, Mr. Stafford said:

"At the beginning of 1928 the entire Spanish importation and distribution of petroleum products was placed in the hands of a company appointed to that work, and properties of all operating companies, foreign and domestic, were turned over to the monopoly. Negotiations for compensation immediately began, but no payments had been made to American or French interests at the end of the year. Small Spanish companies were satisfactorily compensated and an agreement was effected with the British Shell company."

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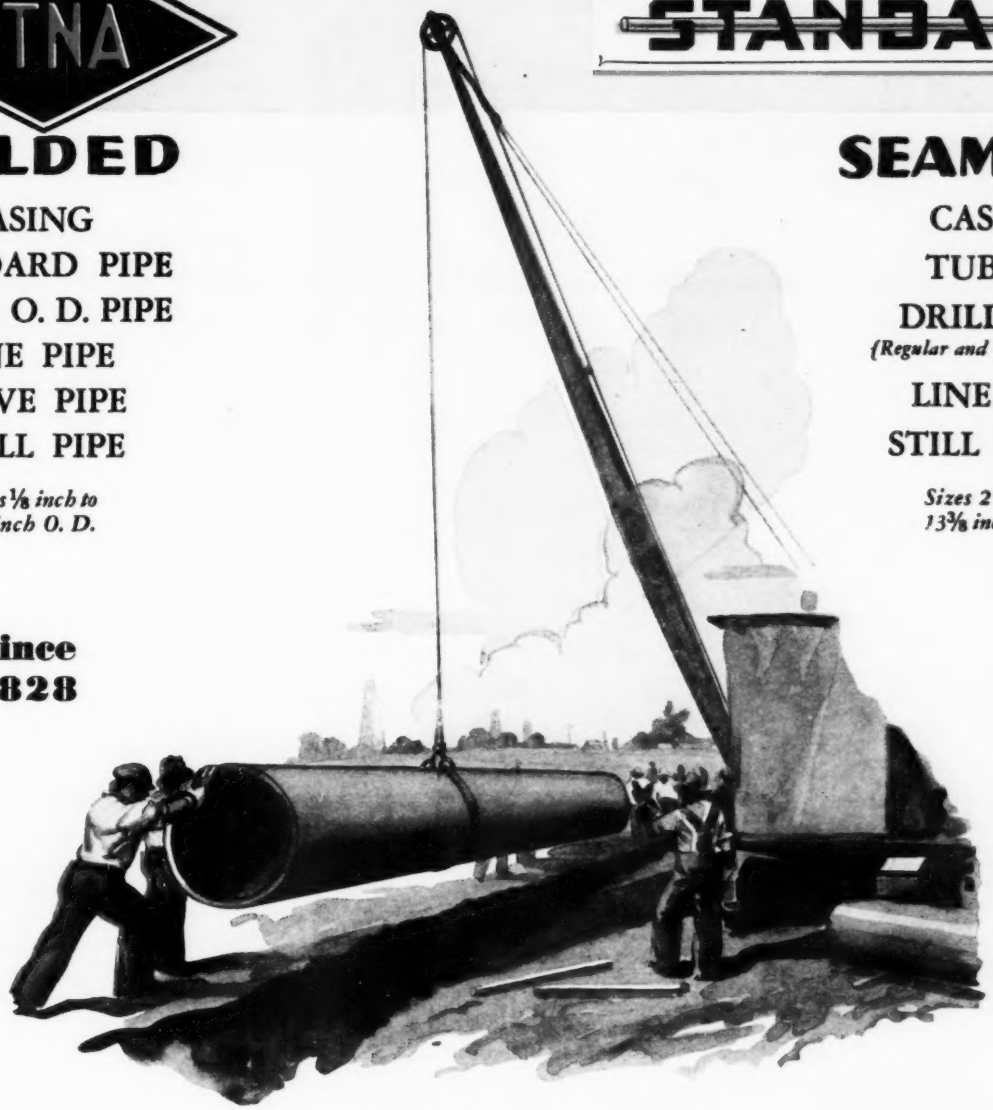

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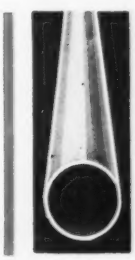
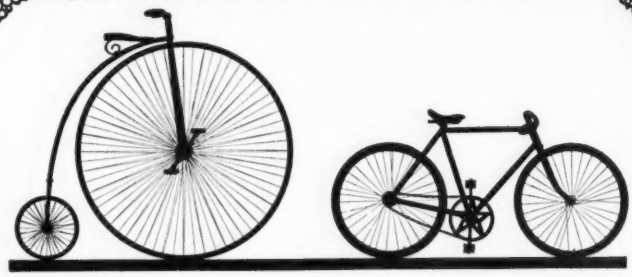


Billions of Bubbles



SMALLER AND BETTER

THAT'S the tendency of this mechanical age. Let your mind run the whole gamut, from abacuses to zithers, and the conclusion is the same—modern manufacturing facilities make for refinement, and refinement for compactness, and compactness for efficiency.

The new Campbell Triplex Gasoline Transformer is a case in point. Because of the multiple heating trays in its stripping section, this apparatus is more efficient than the old-style column of even twice the height.

These results speak for themselves (this is gasoline from the Long Beach field):

Gravity 87.2, Initial 59, 10% 67, 20% 74, 30% 82, 40% 94, 50% 109, 60% 130, 70% 155, 80% 186, 90% 250. F. B P. 337. Recovery 92%. Gravity after distillation 86.8.

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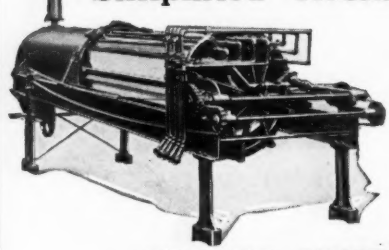

ONE of the features of the Oliver United Residuum Filters is that they greatly simplify the treatment.

If desired, they can take the residuum direct from the stills and in one pass reduce the solid contents to less than 0.2%.

And this treatment is averaging considerably under 5c a barrel, over-all costs.

OLIVER UNITED FILTERS Inc.

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CHICAGO, 565 Washington Blvd. SALT LAKE CITY, Felt Bldg.
LOS ANGELES, Central Bldg. LONDON, W. C. 1, 150 Southampton Row
PARIS, 63 Ave. des Champs Elysees.
BRANCHES IN FOREIGN COUNTRIES

New Equipment

Combustion Engineering Corp., 200 Madison Ave., New York City, has off the press a bulletin describing its C-E water level indicator, a new product. This device indicates the water level in the boiler at the eye level of the operator. The indicator can be located to meet any local condition, and is easy to install, the bulletin says. It operates in the cold water circuit and is valuable at higher pressures where the water temperatures make the gage glass fog quickly.

* * *

Meurer Steel Barrel Co., Inc., Long Island City, N. Y., moved its general offices on July 1 to its new plant at 105 Ave. L, Newark, N. J. The company claims that this new plant is the largest in the east devoted exclusively to the manufacture of steel shipping barrels and drums, having a capacity of 4000 barrels daily.

* * *

American Meter Co. held a three-day conference recently at the Erie, Pa. Metric Metal Works division plant, which was devoted to the developments in gas measurement and to the consideration of practical methods for making sales and engineering service increasingly effective.

Orifice measurement and displacement measurement were among the subjects discussed.

The company plans to extend its D. McDonald & Co. division in Albany in order to center all problems of displacement measurement by tinned steel case meters into one laboratory.

* * *

The Central Tool Co., Oklahoma City, Okla., has opened a shop at Capitol Hill, in the Oklahoma City field. The shop is under the supervision of R. A. Painter. The shop will do all sorts of rotary and cable tool repair work.

* * *

The Globe Machinery & Supply Co., Des Moines, Ia., manufacturer of Globe auto hoists, has built a $100,000 plant for the construction of its hoists. The building is one-story brick, with about 20,000 square feet of floor space. Increased demand has made the erection of another building necessary, the company says.

Light and ventilation were given attention in the planning of the building to promote the highest manufacturing efficiency.

* * *

International Combustion Engineer-ing Corp., 200 Madison Ave., New York City, has launched a new monthly magazine in July, called *Combustion* which will be devoted to the advance of standards of fuel utilization and steam generation. The July issue contains 64 pages about equally

divided between editorial matter and advertising. Among articles published in that first number were problems of heat absorbing surfaces in modern boiler furnaces, steam generation standards, special design in vessels for high pressures and temperatures, industrial steam generation, and so on. Authors of all articles will be men who are recognized authorities in their respective fields.

* * *

The Autocar Co., Ardmore, Pa., has received an order for 31 chasses from the Sinclair Refining Co., New York. The chasses ordered are three-ton type with six-cylinder engines, to be equipped with Autocar deluxe coupe-type cab, pneumatic truck tires and 800-gallon tanks. They will be used by the Sinclair company in delivering oil products in its eastern territory.

* * *

The P. H. & F. M. Roots Co., Connersville, Ind., has just issued a new 16-page bulletin, Number 22-B1 on low pressure type rotary positive blowers. The bulletin covers the new Roots blowers equipped with Timken, SKF and Hyatt Bearings, and replaces the former bulletin 1011 issued by this company. With this bulletin, the Roots company is including another new bulletin, 10-B1, "Covers Industry Like a Blanket," and a book on "Engineering Tables," all bound in a loose-leaf cover. Complete catalog on request.

* * *

Continental Can Co., Inc., 100 East 42nd St., New York City, expects to spend about $5,000,000 on new plant construction and improvements to present facilities. It has already spent over $3,000,000 for this purpose this year to date. In addition to three new plants soon to be completed in Chicago, Oakland, Cal. and Los Angeles, the company has expanded its facilities over the country this year.

It has acquired three can manufacturers and one machinery manufacturer also this year.

Bids Asked on Grease Plant

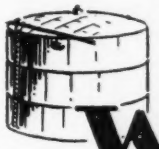
CLEVELAND, July 11.—A committee of the board of directors of the American Oil Corp., Jackson, Mich., is asking for sealed bids for the grease works of the company, including materials on hand at the plant at Jackson and also at the Detroit warehouse of the company.

Bids are to be submitted to C. M. Spinning, vice-president of the National Union Bank and Trust Co., Jackson, before July 15, when they will be opened at a meeting of the directors of the American Oil Corp. Prospective bidders may secure information regarding the properties by writing any of the committee in care of the company, or by inspection of the properties. Members of the committee, in addition to Mr. Spinning, are Jay Thiesen and C. A. Deporte.

MODERN PRACTICE

The Centrifuge

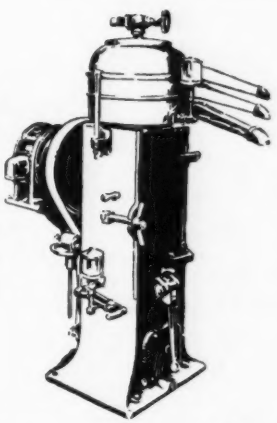
made possible by Refrigeration



WHEN refining was still in swaddling clothes petrolatum and bright stocks could be made only in winter, when the temperature was low enough to operate cold settling tanks.

Today artificial refrigeration enables the refiner to make those products the year 'round....in warm climate or cold.

Since 1882 this company has pioneered the machinery of refrigeration. The name "Vilter" is known to the entire world.



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Comment on Dr. Haseman's Well Spacing Method

Dear Editor:

The paper entitled, "A Formula Method For Well Spacing and Rate of Production," by Dr. W. P. Haseman, published in your June 5 issue, discloses a method for obtaining definite and concrete knowledge concerning the relative yields of oil from a given property when developed and operated more or less ideally with varying spacing programs.

The rate of flow and the ultimate yield of oil from a given stratum into a well are governed by a large number of factors independently related in a most complex manner. However, since the oil is produced through wells, it is possible to relate the independent factors of the sand, the fluids and the well by a simple definition such as that given by Dr. Haseman. This definition groups the many independent variables so that, in reality, there are only a limited number of new variables, and these are related in a very simple manner. Such a procedure is truly scientific.

Dr. Haseman says essentially this: Regardless of the magnitude and the relation of the various independent factors affecting the yield of oil from a sand, we will simply define a standard 10 per cent sand as being one from which one well to every ten acres will produce 10 per cent of all the oil it contains. He then proposes to calculate what fractional part of the oil can be obtained from this sand when different spacings are used. It is conceivable that two different oil reservoirs with different degrees of oil saturation, different gas-oil ratios, different rock pressures, different sand permeabilities, different fluid viscosities, etc. might yield 12 per cent of their oil with one well to ten acres. If they do, they are 12 per cent sands regardless of the magnitudes of the various factors which affect the yield.

The exponential law which Dr. Haseman employs is widely used for following the course of many natural phenomena. With a change in constants in each case it describes the growth of bacteria, the speed of a chemical reaction, the disintegration of a radio-active substance, etc. It would be quite unusual if the relation given by Dr. Haseman failed to check ideal field results; however it is remarkable how closely the relation checks results from field practice which introduce errors due to delayed drilling, variable sand and fluid conditions, etc.

In the actual application of Dr. Haseman's work it becomes necessary to determine whether a particular sand is a 10 per cent or 20 per cent sand, and to determine the effect of delayed completion of offsets or near offset wells on the ultimate yield. These calculations necessarily involve additional knowledge of the producing characteristics of a well, but the determination of a working relation should not be as difficult of development as was the fundamental relation. Dr. Haseman indicates clearly that he has developed the necessary working relations, and in the application of them the industry has at its command the most essential tools in the conservation and economic production of oil.

The two articles by Dr. W. P. Haseman were published in NATIONAL PETROLEUM NEWS, *on May 8, page 59, and on June 5, page 63.*

G. Langford,
Norman, Okla.

* * *

Review of Dr. W. P. Haseman's Oil Well Spacing Formula:

In an empirical formula there are usually as many constants as there are conditions that affect the data. These constants are determined by observed data. In case of oil production there are so many conditions that affect the data that a formula that contains as many constants as conditions is impractical.

Dr. W. P. Haseman's well spacing formula is unique in that it groups all conditions that affect the problem into one constant, called by him the spacing constant. This is permissible provided one combination of conditions, having given end values, give the same intermediate values as another combination of these conditions. Theoretically, there is no reason why this may be true. However, if the variations of these intermediate values are not large enough to affect the practical problem of well spacing, the formula may be used in practice. In other words, if the results given by the Haseman formula are close enough to the observed data, that the difference does not affect the economics of adding or subtracting a well in a ten acre tract, then the formula is a splendid addition to the science of oil production.

In order to prove the worth of the Haseman formula conclusively, it should be used on further observed data. Haseman has found that it checks very closely in a number of instances, and is justified in assuming that it might apply in any ordinary case. Due to the large expense of drilling one well, the Haseman formula may give wide variation from observed data and still be practical. With this in mind, there is a splendid chance that the Haseman formula will give the correct number of wells for a given tract, in order to yield the most economical returns.

We hear today much talk about oil conservation. Why not begin by applying scientific, rather than guess-methods to oil well spacing?

Signed: Chas. Haseman.

Dr. Charles Haseman,
Professor of Mathematics and Mechanics,
University of Nevada, Reno, Nev.

* * *

Gentlemen:

I have read with considerable interest the paper by Dr. W. P. Haseman on "A Formula Method for Well Spacing and Rate of Production" which appeared in a recent issue of the NATIONAL PETROLEUM NEWS. Only a man with Dr. Haseman's training as a physicist and wide experience as a practical petroleum engineer would be able to make such a valuable contribution to the solution of this important problem. The most difficult problems to solve are those in which the various factors involved are too many, or too difficultly controlled, to permit the usual rigorous scientific procedure.

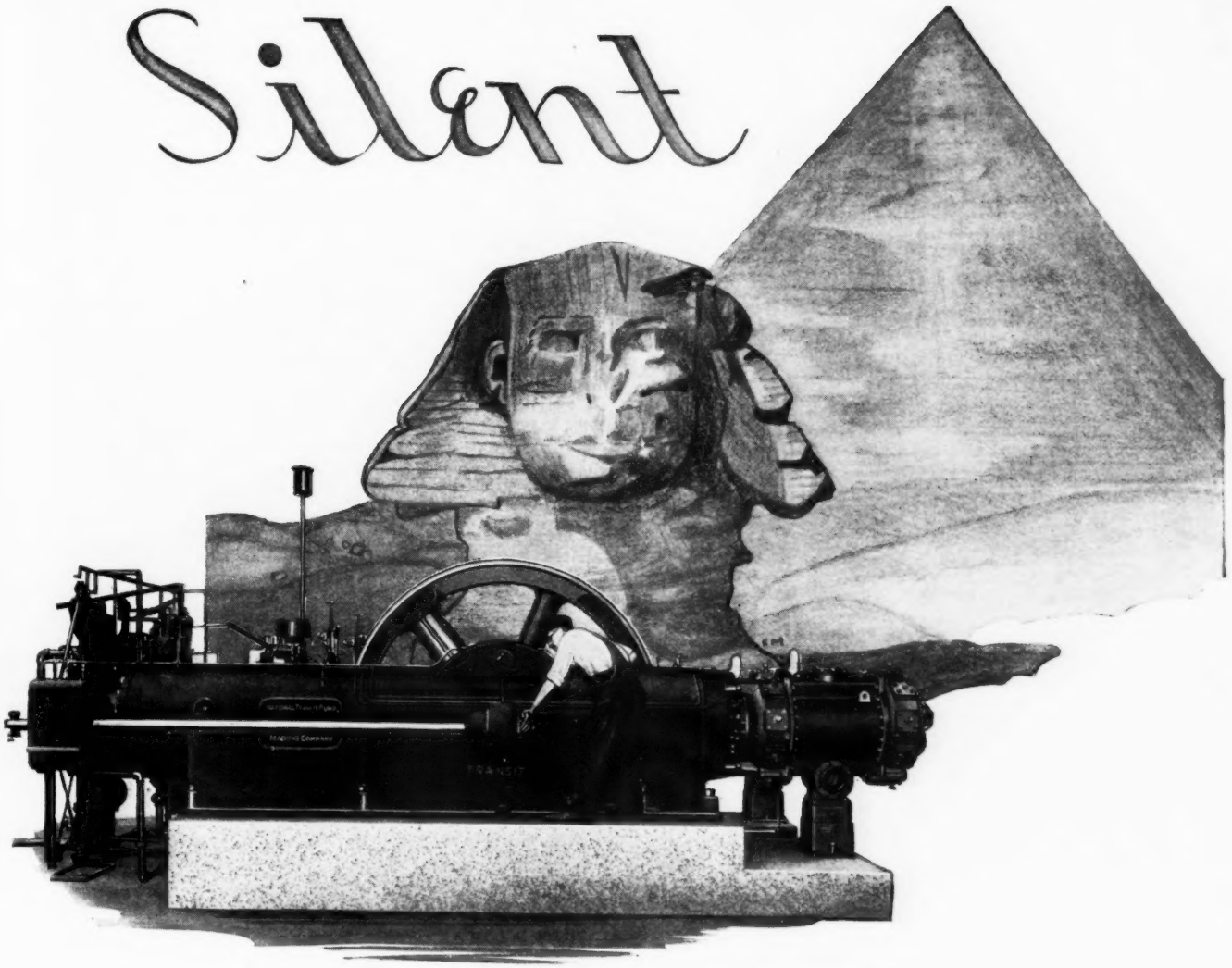
Sometimes such complicated problems can be fairly successfully handled by a man whose judgment has been ripened by long experience but the history of the oil business has shown that something more than experience is needed.

Dr. Haseman, being thoroughly familiar with the methods of physical science, has been able to discard, with a freedom that would be impossible for a lesser scientist, all complexities which would hinder rather than help in the present problem. He establishes a general formula or equation which may be expected to fit sands of various producing qualities. The constants for a given sand must of course be determined from actual data obtained from the first wells which are drilled. These constants having been determined, the intelligent application of the formula to the problem of actual well spacing of the field should result in a far more efficient drilling program than is at present possible.

Very truly yours,
Homer L. Dodge

Professor of Physics and Dean of the Graduate School, University of Oklahoma

Silent



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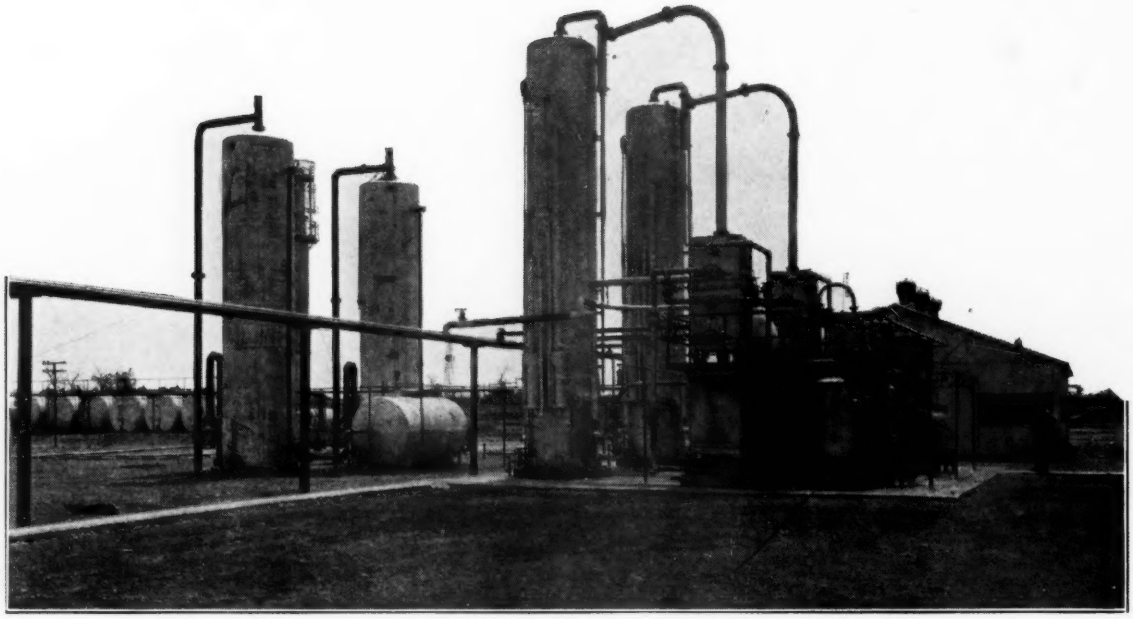


Absorbers and distillation units at Gypsy Oil Co.'s Mission gasoline plant

Gasoline Replaces Water as Refluxing Agent at Mission Pool Plant

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA

NEW tendencies in natural gasoline plant construction in the Mid-Continent field are well illustrated in the Gypsy Oil Co. plant in the Mission pool of the Seminole district. This is a six-unit absorption plant handling an average of 13,000,000 cubic feet of casinghead gas per day.

The stabilizer equipment at the plant is rectifying around 1000 barrels of compression gasoline each day which is produced at adjacent gas lift plants in addition to the 800-barrel production of the absorption plant itself.

Features of the plant in brief are:

1. New type distillation units utilizing gasoline only as a reflux agent thus eliminating the conventional water-cooled coil at the top of the reflux tower.

2. A complete gathering system for collecting exhaust steam and returning the condensate to the boilers.

3. Electric generating equipment to supply all current requirements.

4. Motors, direct connected to centrifugal pumps, are used for all liquid transfer purposes in the plant.

5. Automatic controls have been applied at all points where constant operating conditions give best results.

Two distillation units have been installed at the plant.

They were Type 200 units with a normal capacity of 20,000 gallons each per day. This type unit was brought out by the Southwestern Engineering Corp. a few months ago. The Gypsy installation at the Mission plant is one of the first made in the Mid-Continent.

Unlike former Southwestern units, the steam still and dephlegmator have been combined in a single tower. The dephlegmator section is set above the steam still. Vapors from the still rise directly from the top tray of the still to the bottom tray of the dephlegmator.

Steam which condenses in each section of the tower is drawn off automatically through specially designed water traps. These are on the principle of a U-tube. Water drops from the tray to a trap and passes out a line of smaller diameter. The weight of the column of liquid above the trap regulates the flow of condensate from the system.

As mentioned previously, the knockout box has been eliminated from the top of the dephlegmator section and gasoline is used exclusively to control the temperature at the top of the tower. Gasoline to trim the tower is picked up by a reciprocating steam pump (almost the only pump of that type in the plant) from an accumulator tank which has been added to the system after the condenser section.

The reflux pump is controlled by the temperature at the top of the tower. Under present practice the top of the tower is maintained at around 220 F. and the gasoline produced has an end point of 300 F.

The reflux ratio is reduced materially by using gasoline instead of water. Where an average ratio of 3 to 1 is required with water it is possible to use about 1.5 to one when gasoline is pumped back as a trim.

THE water supply of Mid-Continent gasoline plants is generally loaded with scale forming compounds. Unless careful treating is practiced, the average plant has trouble with water cooled knockout boxes on dephlegmator towers. It was partly for that reason that the coil has been eliminated in the new type unit.

An important advantage of using gasoline as a refluxing agent is the fact that it provides an inexpensive method of rerunning off-color gaso-

line which is made even in the best plants now and then when something goes wrong.

When a tank of off-color gasoline is on hand it may be hooked to the reflux pump and the unmarketable product pumped over the top of the tower. In its downward course through the dephlegmator and still, the gasoline will be revaporized and recovered as a clean, water white product ready for shipment after the normal treatment for the doctor and corrosion tests.

With this method of rerunning the still is not overloaded and no additional equipment is required. The cost of rerunning may be said to be nothing.

Oil circulation through the distillation unit is maintained by 300-gallon per minute, four-state Goulds centrifugal pumps. The rate of circulation is kept constant by Foxboro controls. Single stage centrifugals are used for water circulation. Both types are direct connected to G. E. electric motors.

Two 175 K.W. generators have been installed to provide current for the plant and adjacent Gypsy properties. Each generator is direct connected to a 250-horsepower gas engine. These are four-cylinder, Hope vertical type engines manufactured by the Cooper-Bessemer Corp.

Since electric current is used so generally, the steam requirements are materially reduced. Three oil field type boilers provide sufficient steam to operate the rectifying equipment, preheaters, steam distillation and the few steam pumps.

AS MENTIONED previously, the make-up water requirements of the boilers are kept at a minimum by saving all condensate. The condensate return system taps the kettle of the rectifying column, the preheaters and the water traps from the steam still and dephlegmator tower. Raw water required is picked up by an automatic pump from a pond supply. Copes water feed regulators have been applied to the boilers.

Another important water saving is made at this plant. Cooling water used on compressor exhausts normally is allowed to run to any adjacent creek because of the oil it is likely to carry which should not contaminate the boiler make-up supply.

Discharged cooling water from the engines used at the Gypsy plant is dropped into a concrete sump. Cold water is picked up continuously by a centrifugal pump and recycled.

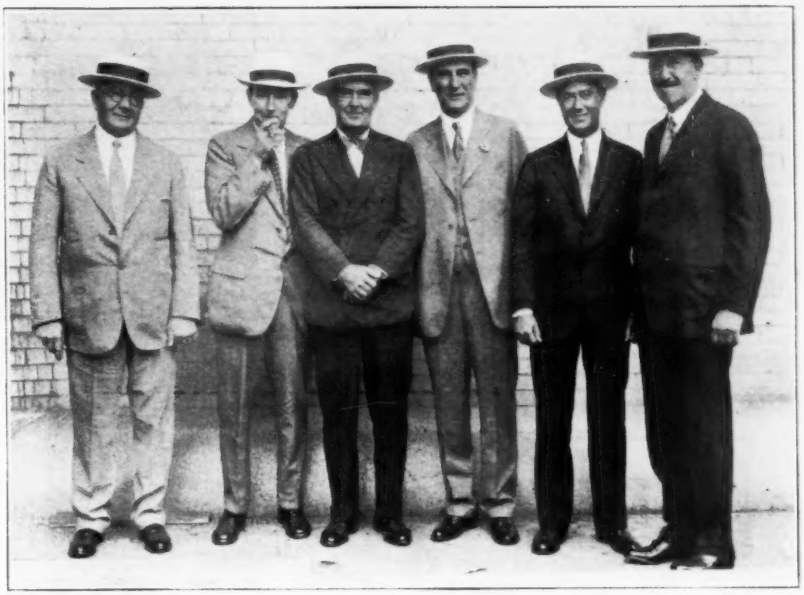
The rectifying column equipment is of standard Gypsy design. It is a single column calculated to rectify the absorption plant make and the wilder gas lift plant product to Grade AA specifications used at Gulf refineries. The column operates at about 150 pounds pressure and is capable of handling around 2400 barrels of raw charge per day.

Motor driven Gaso pumps are used to circulate cold water through the coils at the top of the column and inject the gasoline charge.

Since all Gypsy made natural gasoline moves to Gulf refineries on regular schedule little storage capacity is provided at the plant. The plant production must be loaded out each day at the Mission plant.

Gypsy air-gas lift plants in the Mission field now are being converted into straight compression plants to operate at 350 pounds pressure. This will result in a much greater production of gasoline from this district.

Mid-Continent Directors on Visit



TULSA, July 11.—Several members of the directorate of the Mid-Continent Petroleum Corp. paid an informal visit to the corporation's main office and refinery in Tulsa recently. They also were guests of Jacob France, president, on a motor trip through the Seminole oil field.

The picture above shows those in the party. They are, left to right: Henry N. Gries, Tulsa; Stuart Olivier, W. W. Lanahan, both of Baltimore; Jacob France, Tulsa, president; E. McClure Rouzer and A. W. Gieske, both of Baltimore.

Ford Again Disavows Alemite Circulars

CLEVELAND, July 11.—The Ford Motor Co. has just reiterated in a letter to NATIONAL PETROLEUM NEWS that it is not recommending Alemite grease for Model A Ford cars. Oil companies have recently called NATIONAL PETROLEUM NEWS' attention to circulars being mailed owners of new Fords by the dealers from whom they bought the cars. The literature bears the imprint of the dealer but it originates with the manufacturers of Alemite equipment and grease.

The letter from the Ford company follows:

"Our position with respect to the Alemite company and their service plan is no different today than it was when we wrote you in February. At that time we made it clear that our company was not recommending Alemite grease—also that the script word 'Ford' had been eliminated from their literature covering the plan.

"We could go no further than this, and do not see how we could consistently take any action to restrict the Alemite company's merchandising effort covering their service plan. The current literature is not in our opinion inconsistent with the understanding we had in February.

"As you probably know, we are not sponsoring the plan nor are we assisting them in any way to promote its use by Ford dealers."

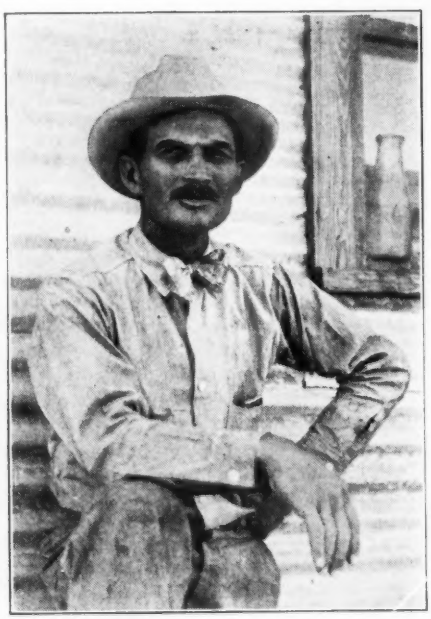
At the offices of the National Better Business Bureau in New York it was said ten days ago that the Alemite company had agreed to eliminate from its advertising copy some of the assertions concerning greases about which oil companies have protested to the bureau.

A Page of West Texas Refinery Superintendents

H. C. Chaddick, superintendent, and Eugene Griswold, president, Pecos Valley Refining Co., Pyote, Tex.

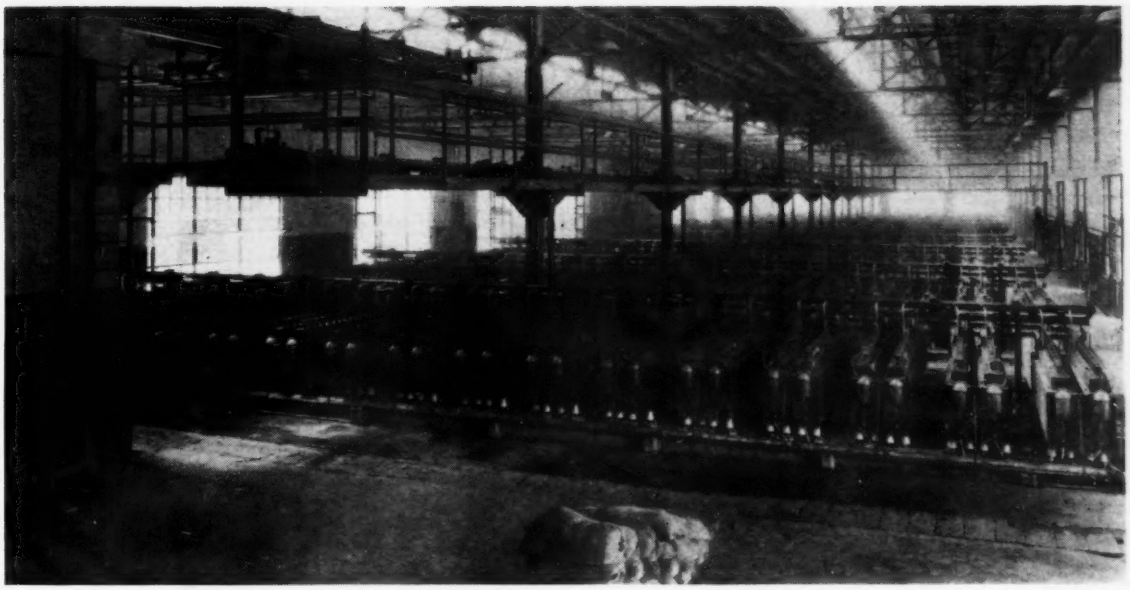
Wayne P. Rice, superintendent, Cosden & Co., Inc., Big Spring, Tex.

H. F. Englehardt, superintendent, Midland Refining Co., Midland, Tex.



H. J. Poups, superintendent, Tonkawa Petroleum Co., Pyote, Tex.

A. V. Raplee, superintendent, Amarillo Producers & Refiners Corp., Pyote, Tex.



Cell room No. 2, chlorine plant

How Gulf Refining Co. Manufactures Anhydrous Aluminum Chloride

By A. M. McAfee*

IN 1915 at the San Francisco meeting of the institute I had the honor and pleasure of addressing you on the subject, "Improvement of High-Boiling Petroleum Oils and the Manufacture of Gasoline as a By-Product Therefrom by the Action of Aluminum Chloride." In that paper I indicated that further papers on the subject might be forthcoming.

That was 14 years ago. That was also the beginning of litigation which has run the gamut from interference proceedings in the Patent office to suits for title in the Federal courts, finally culminating in the Supreme Court, which a few months ago rang down the curtain on the proceedings. While this litigation was going on I did not feel that it was proper to discuss publicly the subject of aluminum chloride.

These years have not only been full of litigation but have also been full of developments in the large scale manufacture and use of aluminum chloride by Gulf Refining Co., with which I am associated. I am here to tell you something of those developments, and today I shall discuss the manufacture of commercial anhydrous aluminum chloride and give some details of Gulf Refining Co.'s method of manufacturing this interesting chemical in quantities and at a cost which ranks it among the heavy chemicals of commerce, such as caustic soda.

Aluminum Chloride Made Commercially Available

In 1913 I purchased a few pounds of aluminum chloride for $1.50 per pound. Six weeks were required to get it. Today, Gulf Refining Co. is manufacturing it at Port Arthur, Tex., from bauxite ore and chlorine at the rate of 75,000 pounds per day and at a cost that permits of its sale in carload lots at 5 cents per pound.

I have been somewhat amused by the remarks about the high cost of aluminum chloride which nearly always accompany the published references to its uses.

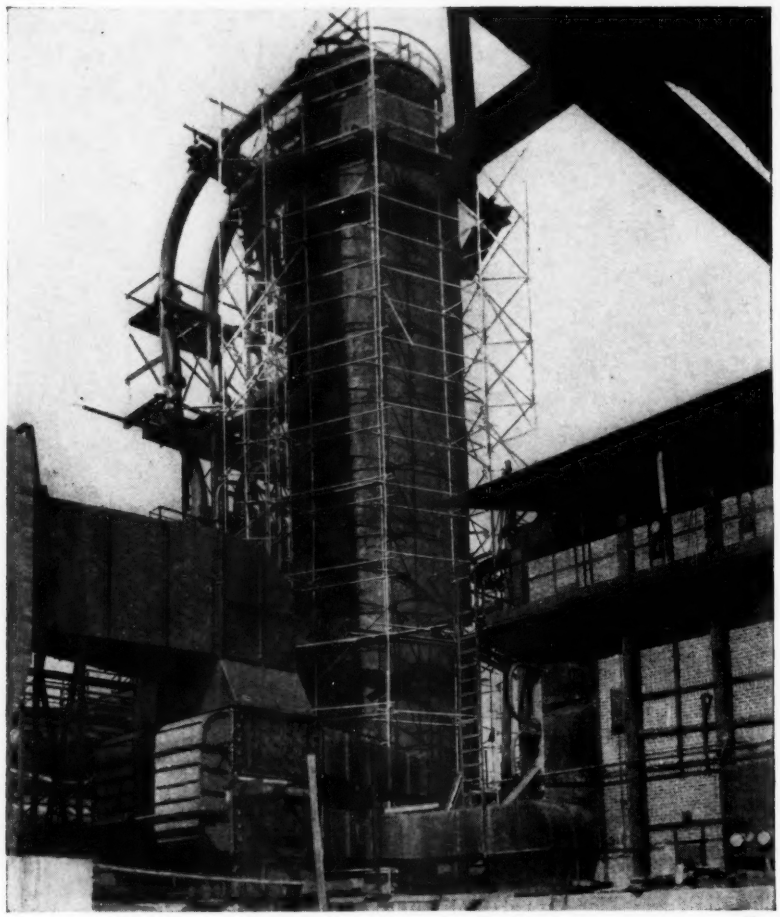
Various authors say: It will do this and do that, *but*—and the usual "but" is that it is too expensive. The lowest figure that I have seen published heretofore is 15 cents per pound and that seemed to be a wish rather than a reality. Within the last few months one of our chemical journals published an article in which the statement was made that all the anthraquinone manufactured in this country is being made synthetically by means of aluminum chloride *but* the process is handicapped by the high cost of aluminum chloride and the difficulty of handling it.

I TRUST that this paper will effectually dispose of the first objection, and in regard to the second, I would say Gulf Refining Co. has handled thousands of tons at its Port Arthur refinery and has shipped hundreds of tons in iron drums by rail to its Fort Worth refinery without difficulty.

Baeyer's statement long ago that the story of the uses of aluminum chloride sounds like a fairy story, is true. Elbs' "Synthetischen Darstellungs Methoden," Volume 2, published in 1891, devotes 45 pages to alumi-

*Gulf Refining Co.

For years refiners have known the Gulf has been using the aluminum chloride process in refining gasoline but the methods by which the chemical was manufactured have been kept secret. So far as we know this is the first time they have been revealed. Dr. McAfee is the inventor of the aluminum chloride process of refining and has been a leader in the development of the manufacturing methods described.



Air Preheaters in Foster Wheeler Distilling Units

A Foster air preheater as applied to a complete Foster Wheeler refining unit for reduced crudes, is shown in the accompanying illustration. It is located at the left of the base of the fractionating tower between the tube still (at the right of photograph) and the stack. The air preheater is of the plate type and consists of four interchangeable sections.

Heat is recovered from the flue gases passing thru the preheater on the way to the stack and is returned to the still in the preheated air for combustion.

Oil enters the tube still at a temperature of 530 deg. F. With this high initial oil temperature, the flue gas is at a correspondingly high temperature. To maintain economy, it is therefore necessary to recover the excess heat from the flue gas. The preheater accomplishes this result.

Combustion is improved by the use of preheated air and a thermal efficiency of 80 per cent may be maintained in operating the still.

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num chloride in the Friedel and Crafts syntheses of hydrocarbons, ketones, acid amides, phenols, etc. Meyer and Jacobsen of 1902 contains 178 references to various applications of aluminum chloride in synthetic organic chemistry.

Its possibilities in commercial organic syntheses have long been recognized but little progress commercially has been made heretofore, on account of the high cost and inadequate supply. Not until recent years has there been a determined and successful effort to make aluminum chloride cheaply and in large quantities. To Gulf Refining Co. goes the credit of having first tackled and solved this problem. Here again necessity was the mother of invention. Gulf Refining Co. was in possession of a process for making gasoline from higher boiling hydrocarbons and a process for refining petroleum oils in general and lubricating oils in particular by means of this remarkable chemical.

The possibilities of these inventions were alluring but they were indeed fairy stories until aluminum chloride could be made from basic raw materials (not metallic aluminum) at a reasonable cost and by thousands of tons.

Development of Process Took Time and Money

Our first attempt to make aluminum chloride in a large way was started in 1915. There was no precedent to which we could turn for help. We had to make the best guess possible and let Gulf Refining Co. foot the bills, which it generously did for several long, lean years.

The first apparatus consisted of vertical fire-clay retorts about 24 inches inside diameter by 20 feet in height. These were heated from the outside. The fire-clay tile cracked from top to bottom. No aluminum chloride was made except when metallic aluminum was used, which of course was out of the question. Cost: six months' time and thousands of dollars.

Then circular fire brick was substituted for the fire-clay tile. This was an improvement, insofar as the fire brick did not crack under the heat of 1600 F., but chlorine is, as you well know, a lively agent at ordinary earthly temperatures; heat it to 1600 F. and it eats brick. This method was too expensive to be considered. Cost: Another six months and another several thousand dollars.

For trial No. 3 we called in the best ceramic experts we could find and built retorts of porcelain, with ground joints, fired with outside producer gas to keep down hot spots. But chlorine at 1600 F., in the presence of carbon, devours porcelain quite as readily as fire brick. We were trying to make aluminum chloride by applying the necessary heat through retort walls to bauxite, carbon and chlorine.

Where the heat should be greatest it was least and where it was most intense, along the retort walls, heat was not desired. At these temperatures it takes chlorine a surprisingly short time to eat a hole in a retort wall—and that hole does not get smaller.

The records show that we spent close to two years and one million dollars trying to make aluminum chloride from bauxite ore in a large way, without bringing the cost of production anywhere near a reasonable figure. We had come to realize that there were substantial reasons why this chemical had never been made in large amounts and why its cost so often mentioned as prohibitive in the arts.

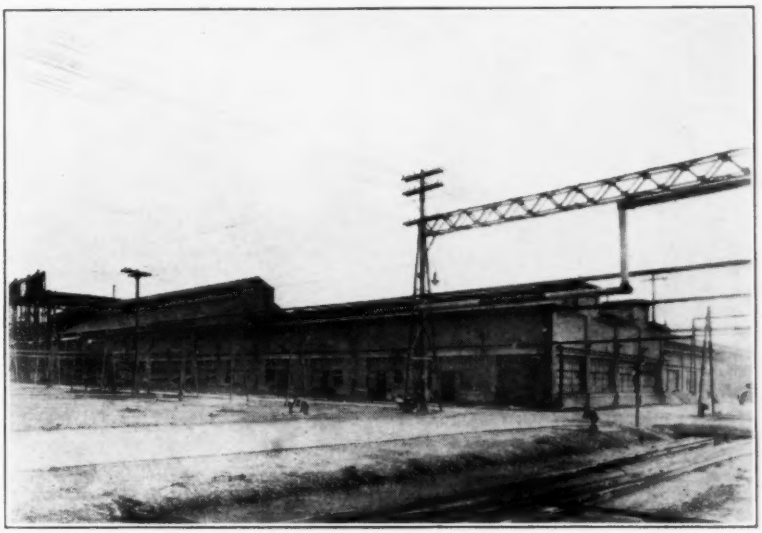
But this time and money was not spent in vain. We learned many important details of how to do it and how not to do it. There were several more years of development work and each successive step proved to be one in the right direction, until today the process is one of extreme simplicity.

Details of Present Operating Practice

The present process, which has been operating successfully for several years is as follows: Crude bauxite ore, which should be reasonably low in silica and iron, is calcined in an internally heated rotary kiln at about 1800 F. to drive off the free and combined moisture which usually amounts to about 40 per cent of the ore.

From the kiln, the bauxite is delivered by belt conveyor and bucket elevator to a weighing hopper where is added a good coking coal in the proportion by weight of approximately 3 parts of bauxite to 1 part of coal. The mixture of bauxite and coal is then put through a pulverizer where the two solids are ground to a powder. From here it is directed to overhead hoppers which feed into mixing vats to which is delivered a liquid binder, such as wax tailings or melted asphalt.

The mixers discharge automatically into briquetting machines which press the bauxite, coal and binder into briquets under a pressure of 3,000 pounds per square inch. Each briquet weighs approximately two pounds. Before chlorinating, all hydrocarbons as well as moisture must be driven out of the charge, otherwise there will be a waste of chlorine as hydrogen chloride. Hence the briquets are preheated to approximately 1500 F. which drives out the volatile matter in the coal and leaves a hard briquet composed of approximately 82 per cent bauxite and 18 per cent carbon. The hot carbonized briquets are then charged to the chlorinating furnaces.



Front view, chlorine plant buildings

Chlorination of Carbonized Bauxite

The largest chlorinating furnace which we have thus far built has a capacity of 40,000 pounds of aluminum chloride per day. It has an inside diameter of 5 feet and the shaft is 20 feet in height. The shaft consists of two courses of circular fire brick and behind these is a layer of powdered bauxite encased by an iron jacket. The object of the powdered bauxite is to protect the iron from chlorine.

Near the top of the shaft are inlets for chlorine and near the bottom an outlet for aluminum chloride leading to condensers. This size furnace takes about 20 tons of carbonized briquets at a charge. These are introduced through an opening at the top of the shaft.

A blast of air is then introduced near the bottom and also half way up the shaft for about 15 minutes, at the end of which time the charge of

briquets will have been heated to the desired chlorinating temperature of around 1600 F. The top door is then closed and chlorine turned in for a period of 8 to 10 hours when it becomes necessary to replenish the charge of briquets and restore heat.

With smaller size chlorinating furnaces it is necessary to recharge and restore heat more frequently. Thus the operation proceeds in any particular furnace until the fire brick lining must be renewed. Under present operating practice, a lining is good for about 100 days.

Impurities In Commercial Product

Having in mind that all of the constituents of bauxite are converted into volatile chlorides, the quality of the aluminum chloride produced obviously depends upon the quality of the bauxite used. The analysis of bauxite is generally given on the dried basis, and that is the basis I have used in the following. A bauxite containing not less than 57.5 per cent alumina is considered good quality, in respect to the alumina content.

Aside from fractional amounts of alkali and alkaline earth elements, and perhaps rare earth elements, the remaining constituents of bauxite are combined moisture and the oxides of silicon, titanium, and iron.

In the Arkansas and South American bauxites the combined moisture and titania content vary only slightly, usually 29 to 31 per cent and 2 to 3 per cent, respectively. Silica and ferric oxide are the variables to be watched.

The presence of silica means the loss of chlorine as silicon tetrachloride and the more iron there is in the ore, the more ferric chloride in the aluminum chloride. We do not like to use a bauxite containing more than 5 per cent silica and 3 per cent iron oxide. With these constituents fixed at a maximum figure, the alumina content takes care of itself.

There is an abundance of bauxite available in South America and considerable in Arkansas running much lower than 5 and 3 per cent of silica and iron oxide respectively. The ore which we are now using, and have been for a long time, enables us to make commercial aluminum chloride containing not less than 94 per cent aluminum chloride, the remainder being varying percentages of the chloride of iron, titanium, and silicon, in amounts diminishing in the order named.

Development of Condensers for Aluminum Chloride

I might say a few words about aluminum chloride condensers. This equipment also went through a development stage of trial and error with plenty of grief. If any of you ever had occasion to prepare aluminum chloride in the laboratory, you probably followed Gattermann's directions, which describe at some length how to avoid stoppage of the apparatus by aluminum chloride condensing where it is not wanted. Doubtless you were impressed with the importance in observing his precautions. As you know, aluminum chloride passes from the vapor to the solid phase, under substantially atmospheric pressure, without going through the liquid phase. It condenses quickly and makes about the best stopper that I know.

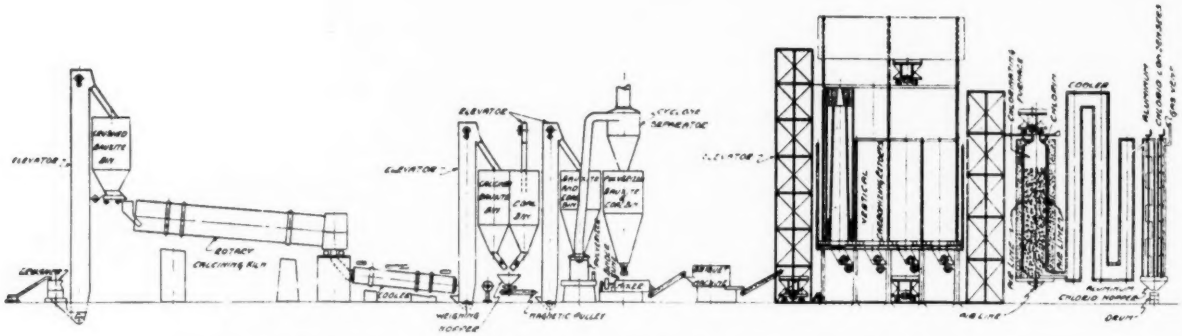
Another problem was what material should be used for large scale condensing and another, what design. In the early days we started out with a modest sized brick condenser with staggered baffles. This was connected as closely as possible to the chlorinating furnace.

The aluminum chloride had to be discharged by hand. This did fairly well for that scale of operation but when we got into larger production, the manual labor required to remove the product was found to be prohibitive. Another item which did not show up in the smaller condensers was even more serious. Carbon monoxide is one of the gaseous products of the reaction.

The brick condensers used at that time were about 30 feet long, 12 feet high, and 6 feet wide. This provided space for the accumulation of sufficient carbon monoxide which when mixed with air, as would often occur, resulted in an explosion which at times would wreck the whole condenser.

Many of our present employees have been with the process from the beginning of large scale work. They have many stories to tell, but none more amusing than their experiences with these condensers.

Today all our aluminum chloride is condensed in 16-inch iron pipes placed vertically. Revolving shafts and blades inside the pipes knock the aluminum chloride into hoppers as fast as condensed. The result is that the chemical is deposited in hoppers in the form of a powder, 75 per cent or more passing a 10-mesh screen. This fineness permits drawing the aluminum chloride through a sliding door into iron drums or other convenient receptacles.



Flow diagram of the Gulf process of making aluminum chloride

If aluminum chloride is permitted to condense and solidify undisturbed, as was the case with the old brick condensers, it builds up into a solid rock-like mass, ultimately plugging the condenser no matter what the size. I have seen aluminum chloride spudded out of the brick condensers in chunks weighing several hundred pounds each. Aside from labor saving, the advantages of the present type condenser over the old type can readily be appreciated.

The life of an iron pipe condenser such as I have described is at least two years. This is surprising in view of the fact that there is always some hydrogen chloride and often a trace of free chlorine in the condensers, particularly if the charge of briquets is allowed to become too low. The reason for this long life is that the inside pipe walls become coated with a thin layer of aluminum chloride which protects the iron from corrosion. Another item which adds to the longevity is the cooler, located between the chlorinating furnace and pipe condensers.

The object of this cooler is to cool the aluminum chloride vapors to a temperature somewhat above their condensing temperature, thus increasing the capacity of the pipe condensers and minimizing the action of corrosive gases. It also acts as a trap for any bauxite or carbon coming from the chlorinating furnace.

Fractional Condensation at 2 mm Absolute Pressure

THE Leach Fracto Condenser, operated in conjunction with a properly designed separator provides satisfactory separation into commercial grades of lubricants.

Returns a profit on capital investment by efficiently reclaiming the heat content of the vapor.

Entails no loss in vacuum due to pressure drop as when other fractionating devices are used.

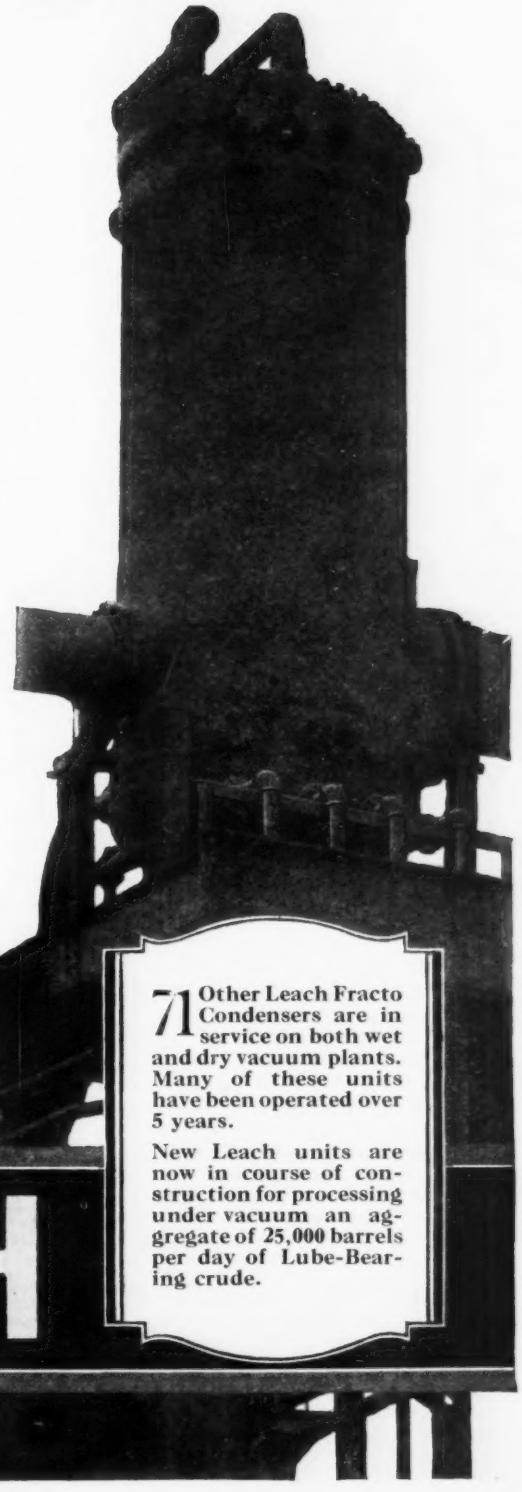
The Leach Fracto Condenser

shown here is in operation on a continuous High Vacuum Flash Distillation Unit

Capacity: 750 bbl./day North Louisiana Crude.
Absolute Pressure: 2-3 mm.
Pressure Drop: 0.5 mm. (through entire overhead equipment.)

One 54 inch Leach Fracto Condenser and one 24 inch Leach Liquid Heat Interchanger preheat the crude charge from 70° F. to 425° F. Four cuts of lubricants are obtained from the condenser. The vapor temperature is reduced from 625° F. to 210° F. The interchanger cools the asphalt bottoms produced by the system from 630° F. to 400° F.

Leach Fracto Condensers are fully protected in the United States and several foreign Patent offices.



71 Other Leach Fracto Condensers are in service on both wet and dry vacuum plants. Many of these units have been operated over 5 years.

New Leach units are now in course of construction for processing under vacuum an aggregate of 25,000 barrels per day of Lube-Bearing crude.

C. H. LEACH COMPANY

225 Broadway, New York City

Main Office: Elizabeth, N.J.

Generator room, No. 1, chlorine plant

The cooler is generally lined with a single course of fire brick.

Further Improvements Promised

Recent improvement in the manufacture of aluminum chloride by Gulf Refining Co. indicates the passing of the necessity for briqueting, substitutes refinery coke for coal, eliminates blasting the chlorinating furnace with air to restore heat, and seems to permit the enlargement of the furnaces to the size of, say, an iron blast furnace. Further, the charge of bauxite and coke is so distributed that practically no chlorine comes in contact with the shaft lining thereby eliminating entirely the trouble to which I referred at some length in this paper.

These facts have been established by experimental work on a large scale, and we are now engaged in converting the plant to this system. Further details of this system can well be the subject of a future paper which I trust I may have the opportunity of presenting to you.

It will be the policy of the Gulf organization to make aluminum chloride available to the public for all uses as freely as possible in excess of Gulf's requirements and subject to royalty when used in its patented process and apparatus for converting and refining petroleum and its products, and it is their expectation that the present price of 5 cents per pound will shortly be lowered to even more attractive figures.

I have tried to indicate throughout this paper that this development has not been a one man job. It has required the combined efforts of many men pulling together, all of whom are now, or at some period have been, a part of the Gulf organization. Some of us may have spent more days and nights on the problems in the early years of development, and, as a consequence, many have come into contact with more grief, but that does not matter now.

It seems fitting that I should mention one in particular, whose personality and leadership inspired us to overcome difficulties which many times seemed insurmountable. I refer to George H. Taber, formerly vice-president of Gulf Refining Co., who retired on December 31, 1928, after 52 years of notable service in the petroleum industry.

New Stations Building

Jacksonville, Fla.—M. W. Wetherington, service station.
Tallahassee, Fla.—Orion C. & Robert C. Parker, filling station.
Indianapolis, Ind.—B. V. Barton, filling station.
Knoxville, Tenn.—Cherokee Oil Co., bulk station.
Des Moines, Ia.—Mid-Continent Petroleum Corp., filling station.
Waterville, Ia. — Mid-Continent Petroleum Corp., filling station.
Emporia, Kan.—Skelly Oil Co., filling station.
Manchester, Ia.—Philips Petroleum Co., service station.
Humboldt, Ia.—Independent Oil & Gasoline Co., service station.
Kearney, Neb.—Burman Oil Co., filling station.
Rochester, N. Y.—Charles H. Hart, filling and service station.
Bluffton, Ind.—Shell Petroleum Corp., filling station.
Reinbeck, Ia.—Skelly Oil Co., bulk station.
Lebanon, Ind.—Walter Reagan and Frank Rader, filling station.
Georgetown, Ky.—B. F. Reed, service station.
McConnelsville, O.—Dr. Fiscus, filling station.
Topeka, Kan.—Shell Petroleum Corp., filling station.
Topeka, Kan.—George R. Gregg, service station.
Arkansas City, Kan.—A. L. Bendure Motor Co. and Hill Buick Motor Co., service station.
Armstrong, Mo.—Shell Petroleum Corp., filling station.
Des Moines, Ia.—Ward Schooler, service station.
Huntsville, Mo.—Main Tire Co., filling station.
Charleston, Ill.—Lemon Tark, filling station.
Ottawa, Ill.—Al Richards, filling station.
Richmond, Ind.—Standard Oil Co., filling station.
Des Moines, Ia.—Independent Oil & Gasoline Co., filling station.
Houghton, Mich.—Public Service Co., filling station.
Great Barrington, Mass.—George Fitzpatrick, filling station.
Newark, N. J.—Benjamin Hammer, filling station.
Corpus Christi, Tex.—D. M. Hyams, filling station.
Rogers, Ark.—Benton County Hardware Co., service station.
West Palm Beach, Fla.—W. E. Moorehead, filling station.
Atlanta, Ga.—R. N. Reed Co., 84 Spring St. here, 4 filling stations.
Corpus Christi, Tex.—Grayburg Oil Co., San Antonio, several filling stations in this vicinity.
Clarksburg, W. Va.—South Penn Oil Co., filling station.
Baltimore, Md.—American Oil Co., filling station.
Valley View, Va.—H. E. Martin, filling station.
Baltimore, Md.—John G. Mann, filling station.
Tuscaloosa, Ala.—Standard Oil Co., filling station.
Waterville, O.—C. Haulund, filling station.
Athens, O.—Mrs. Jennie Srigley, filling station.
Pierceton, Ind.—William O'Brien, filling station.
Palmyra, Mo.—Great Lakes Oil Co., filling station.
Decatur, Ill.—Sinclair Refining Co., service station.
Monroe, Mich.—George Strauss and Irvin Miller, filling station.
Michigan City, Ind.—Michigan City Independent Oil Co., filling station
Eaton, O.—Eaton Tire Service Co., service station.
Waxahachie, Tex.—White Eagle Oil & Refining Co., filling station.
Carrollton, Mo.—Shell Petroleum Corp., 39 bulk stations in this part of Missouri.
Corpus Christi, Tex.—L. Hehns, filling station.
Effingham, Ill.—Standard Oil Co., filling station.
Bradford, Ill.—Sweney Co., filling station.
Corsicana, Tex.—Central Texas Refining Co., service station.
Leeds, Mo.—Standard Oil Co., filling station.
Eagle Lake, Tex.—Humble Oil & Refining Co., filling station.
Lexington, Ky.—Standard Oil Co., filling station.
Toledo, O.—Firestone Tire & Rubber Co., service station.
Madisonville, Ky.—Kirkwood Bros., filling station.
Syracuse, N. Y.—Standard Oil Co., filling station.
Goldsboro, N. C.—Mrs. W. T. Dortch, Mrs. A. G. Barbary and Mrs. Laura Bizzell, filling stations.
Kokomo, Ind.—Roy Barker, service station.
Arcanum, O.—Eaton Tire Service Co., service station.
Muskogee, Okla.—Independent Oil & Gas Co., filling station.
Augusta, Ga.—Boardman Bros., four filling stations.
Benwood, W. Va.—Standard Oil Co., filling station.
Muskogee, Okla.—Independent Oil & Gas Co., filling station.
Des Moines, Ia.—The Texas Co., filling station.
Wilson, Okla.—Carl Tadlock & Jack Moore, filling station.
Charlotte, N. C.—McDonald Service Stations, headquarters here, three filling stations.
Independence, Kan.—Firestone Tire & Rubber Co., filling and service station.
New York—Gulf Refining Co., service station at Old Country Road, Nassau County.
Woodlake, Neb.—Ainsworth Oil Co., filling station.
Weeping Water, Neb.—Farmers Union Cooperative Assoc., filling station.
Hudson, Wisc.—Mr. Berger, filling station.
Corpus Christi, Tex.—Humble Oil & Refining Co., filling station.
Norfolk, Va.—Standard Oil Co., filling station.
Galena, Kan.—Shell Petroleum Corp., filling station.
Savannah, Ga.—Standard Oil Co., service station.
Morristown, N. J.—Torrance Brothers Garage Co., filling station.
Wabash, Ind.—Ernest Hanes, filling station.
Martinsville, Ind.—Robert Dixon, filling station.
El Dorado, Okla.—D. E. Moyer, filling station.
Burlington, Kans.—Shell Petroleum Corp., filling station.
Mercer, Pa.—Pennzoil Co., service station.
Martin, Tenn.—Shell Petroleum Corp., filling station.
Topeka, Kans.—Phillips Petroleum Co., filling station.
Miami, Fla.—John C. Gilford, filling station.
Houghton, Mich.—Pasco Barsanti, service station.
Saginaw, Mich.—Sinclair Refining Co., filling station.
Lebanon, Ill.—Shell Petroleum Corp., filling station.
Paris, Ill.—John Yelton & Son, filling station.
Coral Gables, Fla.—Orange State Co., service station.
New Orleans, La.—Gulf Refining Co., filling station.
Bastrop, Tex.—Cities Service Oil Co., filling station.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

THE idea that complete dewaxing is necessary to produce the most nearly ideal lubricating oil for automobile and airplane engines is gaining ground with a rapidity that is not perhaps fully realized by all refiners.

From the talk I hear in traveling around it appears that perhaps 20 or 30 refineries have recently put in or are putting in special refrigerating apparatus to carry the chilling of the oil down to much lower temperatures than it is possible to reach by the older conventional equipment—even as low as 40 or 50 below zero F.

This low temperature chilling is generally held to be necessary to get the wax into a condition that makes possible its complete removal. Along with the refrigerating equipment a large number of centrifugal machines are being installed in many plants.

The refiners who are putting in the new chilling and dewaxing equipment are in most cases saying little about it. Along about next year it seems likely that we will see a great volume of wax-free motor oil appearing on the market.

* * *

BUILDING a refinery or remodeling one nowadays is a matter of quick work. Those refining companies who do the work with their own engineering staffs have those staffs so well trained and so thoroughly experienced that they can build new equipment mighty fast.

The big engineering, designing and erecting companies who make a specialty of building refinery equipment, it goes without saying, have construction engineers and workmen who lose no time in getting the apparatus into operation and returning a profit.

An example of speed in refinery construction is found in the Latonia Ky., refinery of the Standard Oil Co. of Ohio which was described in the June 12 issue of this paper. This plant was remodeled to an extent almost equal to new building in 6 months. Another is that of the Shell Petroleum Corp. which is completing at Houston a refinery, work on which was begun only 7 or 8 months ago. The refinery of the Pan American Petroleum Co. at Aruba, off the coast of Venezuela has been built rapidly, in the last few months and is now running.

* * *

EVERY little while some new development comes out that raises the question whether Ethyl gasoline is to be offered serious competition for leadership in the anti-knock fuel field.

The latest thing to bring up the question is the news about the hydrogenation process developed by the Standard Oil Co. of New Jersey. The question is: Will the possibility of blending hydrogen and carbon in any proportions, which seems to be offered by the new process, make the use of any dope unnecessary to produce an anti-knock motor fuel?

Theoretically at least it would seem that the degree of unsaturation of gasoline made by hydrogenation could be controlled absolutely. This would mean, it seems to me, that any degree of anti-knock value desired could be obtained in the gasoline. However, it is generally a long distance from the theoretical possibility to the practical expediency of using a certain process, when it is new at least.

* * *

PERHAPS more developments are coming in the cracking field. No official statement has been made and no names can be mentioned but it is a fact that a big oil company that has appeared to be exclusively sold on one of the well known cracking processes, has just signed a deal with the owners of two other processes.

Just what this means cannot be learned. It may mean that rights have been taken under two other processes to permit the company to go ahead with the perfecting of still another process of its own.

* * *

REFINERS interested in the manufacture of lubricating greases will find a special reason for attending the meeting of the Petroleum Division of the American Chemical Society at Minneapolis in September.

One of the three half day sessions of the Petroleum Division will be devoted to a symposium or round table discussion on grease. The move to hold a special session on grease was promoted by R. R. Matthews, Battenfeld Grease & Oil Co., Kansas City and James McKee, Sun Oil Co., a grease expert. Mr. Matthews will be chairman of the grease session.

* * *

THE decision of Committee D-2 of the American Society for Testing Materials to formulate specifications for standard petroleum products, taken at the Atlantic City meeting, seems likely to work for the good of refiners. It is a new thing for the committee which heretofore has strictly avoided any activity in writing specifications and has confined its work to devising methods of testing petroleum products and designing apparatus for carrying them out.

On Committee D-2, manufacturers and users of petroleum products are well represented. The members know each other and they know the requirements of the user on one side and the problems of the refiner on the other. They can get together and write specifications that will be reasonable from both standpoints. If these become standard, the chances are that the tendency of users will be more and more to buy on A.S.T.M. specifications and less to insist on their own sometimes needlessly troublesome specifications.

* * *

FORTY-THREE de Florez circular tube stills are now under construction at various American refineries and five are in operation, according to Luis de Florez, the inventor of this still. Test runs on one of them showed a heat transfer rate of 10,300 b.t.u. per square foot of heating surface per hour, Mr. de Florez says.

Also, another de Florez vapor phase cracking unit designed to produce 1000 barrels a day of gasoline is under construction at the Port Arthur plant of the Texas Co.

Both the circular still and the de Florez process were described in earlier issues of NATIONAL PETROLEUM NEWS, the former on page 75 of the April 24, 1929, issue and the latter on page 69 of the May 1, 1928 issue.

Curtailment Efforts Shattered in May As Crude Output Breaks Record

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, July 13

WHATEVER efforts that were made in April to hold the production of crude oil to the current needs of the market, were blown to atoms in May. Crude oil production not only averaged higher in May than in any previous month, but stocks of crude oil continued their unhalted dash upward, the Bureau of Mines report for May shows.

Gasoline output was stepped up to a new record average but foreign and domestic demand for gasoline attained a new height for all time. Domestic demand in the first five months of this year was 15.46 per cent more than in the first five months of 1928. Export demand was 12.46 per cent more.

Gasoline production was increased 18.45 per cent and, with an increase in imports, has exceeded foreign and domestic demand by more than 11,000,000 barrels in the five months.

Total stocks of all oils increased 3,726,000 barrels in May to 653,529,000 barrels—also a record mark. With producers' stocks of crude, which are not included in this figure, estimated at 9,400,000 barrels, total above ground stocks of all petroleum May 31 amounted to 662,929,000 barrels, almost two thirds of a billion barrels. The increase in stocks of all oils in the year ended May 31, 1929, exceeded 36,000,000 barrels.

However, in terms of days' supply the volume was a little less this year than at the end of May, 1928. Stocks May 31, 1929, constituted 211.1 days' supply at the May rate of demand. Stocks a year before formed 220.2 days' supply at the rate of demand then current.

The May 31, 1929, stocks formed 228.2 days' supply at the average rate of foreign and domestic demand of the first five months of 1929, whereas the stocks of May 31, 1928, formed 237.9 days' supply at the average rate of demand the first five months of 1928.

At the end of May crude oil stocks were more than 25,000,000 barrels larger than a year before and stocks of refined oils more than 11,000,000 barrels larger. Stocks of light crude oils east of California were almost 12,000,000 barrels larger. Stocks of heavy crude oils east of California were approximately 4,000,000 barrels less than a year before, and total stocks east of California were 7,573,000 barrels more than a year before. In California stocks of light refinable crude oil increased 9,868,000 barrels and of heavy crude oil 7,740,000 barrels, a total increase of 17,608,000 barrels in California.

The May report of the bureau covers the operations of 342 refineries which have a rated capacity of 3,375,000 barrels of charging stock a day. These plants were being operated at 81 per cent of their rated capacity. The April report covered operations of 335 refineries which were being operated at 80 per cent of their rated capacity.

High Lights in May Oil Statistics

Crude oil production is at new peak.

Crude oil stocks also set high record.

Gasoline output increased to new record.

Foreign and domestic demand for gasoline surpasses last year's peak demand.

Gasoline stocks were lowered.

Kerosene stocks increased.

Lubricating oil stocks decreased.

Paraffin wax stocks advanced further.

Gas and fuel oil output was curtailed but stocks increased.

Crude Oil

The 52,800-barrel increase in daily average production of crude oil in May over April production to the record mark of 2,723,100 barrels daily, was due to increases in Oklahoma, inland Texas, Kansas, and some of the eastern fields.

Oklahoma average production was

Petroleum Supply and Demand — Barrels

	May 1929	*April 1929	March 1929	Feb. 1929	Jan. 1929	May 1928	Jan.-May 1929	Jan.-May 1928
Domestic Crude Production: Light	76,009,000	71,799,000	73,713,000	67,743,000	74,812,000	67,770,000	304,076,000	323,652,000
Heavy	8,406,000	8,311,000	8,802,000	7,950,000	7,167,000	7,448,000	40,636,000	39,386,000
Imports of crude oil	7,552,000	7,828,000	6,790,000	7,016,000	8,075,000	6,766,000	37,261,000	31,453,000
Imports of refined oil	2,732,000	2,634,000	1,489,000	908,000	884,000	1,163,000	8,647,000	6,197,000
Natural gasoline produced	4,343,000	4,264,000	4,324,000	3,736,000	3,983,000	3,471,000	20,650,000	17,138,000
Benzol used in blending	267,000	255,000	264,000	233,000	250,000	238,000	1,269,000	1,148,000
Total new supply of all oils	99,309,000	95,091,000	95,382,000	87,586,000	95,171,000	86,856,000	472,539,000	418,974,000
Total stocks end of preceding month	649,803,000	643,530,000	634,063,000	625,199,000	613,483,000	615,891,000	613,483,000	589,607,000
Total supply of all oils	749,112,000	738,621,000	729,445,000	712,785,000	708,654,000	702,747,000	1,086,022,000	1,008,581,000
Exports of crude oil	1,932,000	1,726,000	1,572,000	1,678,000	1,972,000	1,493,000	8,880,000	6,801,000
Exports of refined oil	10,928,000	10,357,000	10,801,000	9,506,000	11,714,000	13,014,000	53,306,000	57,386,000
Domestic demand, crud and refined	82,723,000	76,735,000	73,542,000	67,538,000	69,769,000	71,858,000	370,307,000	328,012,000
Total demand	95,583,000	88,818,000	85,915,000	78,722,000	83,455,000	86,365,000	432,493,000	392,199,000
Total stocks of all oils end of month	653,529,000	649,803,000	643,530,000	634,063,000	625,199,000	616,382,000	653,529,000	616,382,000
Days' supply	211.1	218.4	232.2	224.5	232.2	220.2	228.2	237.9
Increase in stocks of all oils	3,726,000	6,273,000	9,467,000	8,864,000	10,660,000	491,000	40,046,000	26,775,000
Daily average new supply	3,204,000	3,170,000	3,077,000	3,128,000	3,070,000	2,802,000	3,129,000	2,756,000
Daily average demand	3,083,000	2,961,000	2,771,000	2,812,000	2,692,000	2,786,000	2,864,000	2,580,000
Daily average excess of supply	204,000	263,000	438,000	316,000	378,000	228,000	373,000	351,000
Crude stocks east of Calif: Light	332,011,000	331,301,000	327,634,000	325,766,000	322,749,000	320,381,000	332,011,000	320,381,000
Heavy	47,531,000	49,405,000	52,025,000	51,173,000	50,164,000	51,588,000	47,531,000	51,588,000
In California: Light	29,038,000	26,500,000	24,067,000	21,810,000	19,196,000	19,170,000	29,038,000	19,170,000
Heavy	101,681,000	100,332,000	100,504,000	99,284,000	98,682,000	93,941,000	101,681,000	93,941,000
Total stocks of crude	510,261,000	507,538,000	504,230,000	498,033,000	490,791,000	485,080,000	510,261,000	485,080,000
Total stocks of refined	141,878,000	141,099,000	138,305,000	135,209,000	133,667,000	130,492,000	141,878,000	130,492,000
Total stocks of natural gasoline	1,390,000	1,166,000	995,000	821,000	741,000	810,000	1,390,000	810,000

*Revised

"I can serve 'em faster now"
This new G & B Meter Pump serves gas as fast as cars will take it. It was tested and perfected long before it was put on the market. The motor is adapted particularly for meter pump service and has modern, vapor-proof housing. Large dial, visible discharge indicator. Everything to make service safe, sure and satisfactory. Used by many large oil marketers. Detailed information in Bulletin T-105. If you use visible pumps write us for information on G & B visibles with the famous "NULTRA" bowls.
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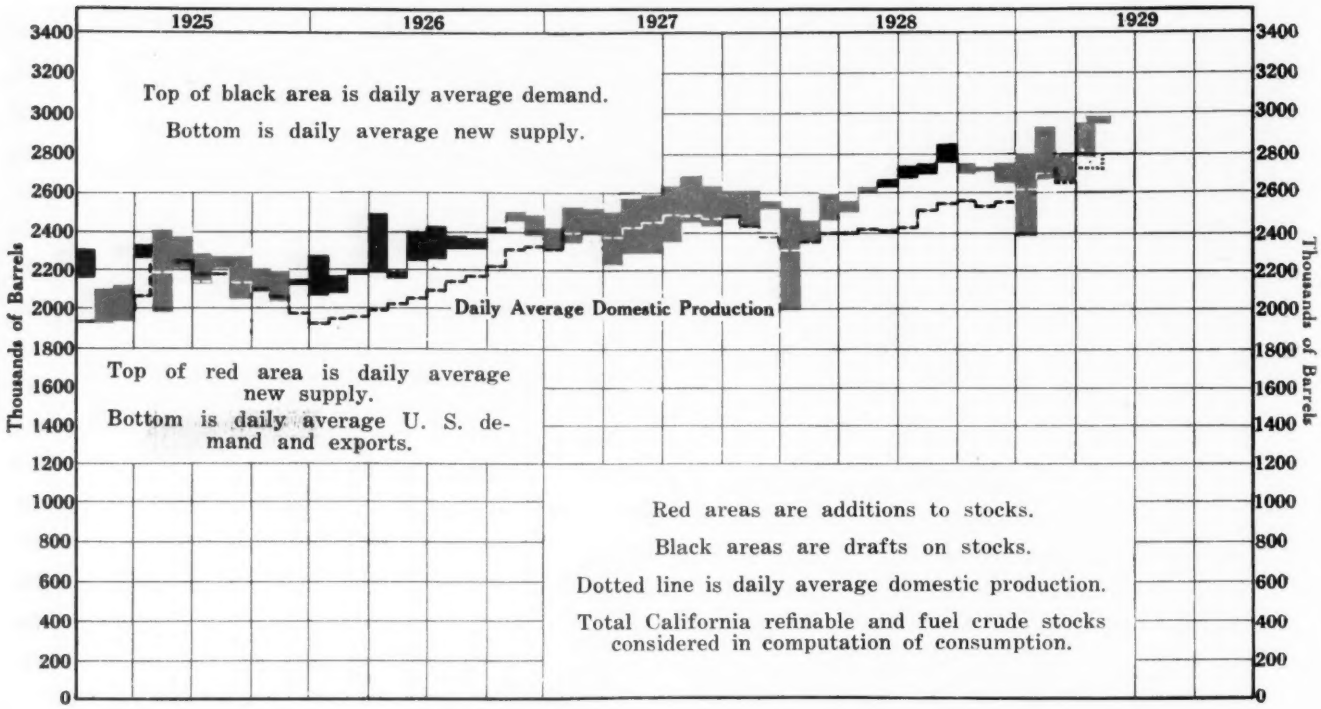
GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS.

DEPENDABLE PUMPS—FOR EVERY SERVICE STATION NEED

Crude Oil Production and Consumption



May domestic production	2,723,100 Bbls. daily av.	
May imports	243,600 Bbls. daily av.	
Total new supply	2,966,700 Bbls. daily av.	
May indicated demand east of California	2,166,200 Bbls. daily av.	
May indicated demand in California	650,500 Bbls. daily av.	
May exports	62,300 Bbls. daily av.	
Total indicated demand	2,879,000 Bbls. daily av.	
Stocks at refineries east of California May 31, 1929	48,558,000 Bbls.	

Stocks in pipe lines and at tank farms east of California	330,701,000 Bbls.
Stocks of light California crude	29,038,000 Bbls.
Stocks of heavy California crude	101,681,000 Bbls.
Stocks of foreign crude not at refineries	283,000 Bbls.
*Total stocks of crude	510,261,000 Bbls.
Increase in stocks in May	2,723,000 Bbls.
Stocks May 31, 1928	485,080,000 Bbls.

*Exclusive of stock held by producers which amounted to about 9,400,000 bbls.

15,200 barrels daily larger in May than in April and inland Texas' production was 24,800 barrels larger. Average Kansas production increased 9700 barrels daily average.

Increases in Illinois, Michigan and Pennsylvania brought the gain in daily average recovery in eastern fields up 7700 barrels over the April average.

California production was 600 barrels daily average less in May than in April. Gulf Coastal production was down 2400 barrels daily average. There was a small gain in Rocky Mountain production.

The production of Pennsylvania grade crude was approximately 66,300 barrels daily average in May. This compares with an average of between 58,000 and 59,000 barrels daily in 1928.

Production in all fields the first five months of 1929 totaled 237,784,000 barrels. This was a gain of 12,934,000 barrels over production the first five months of 1928, or 5.75 per cent. The largest gain in the five months was in California where recovery this year was 23,563,000 barrels or 25.13 per cent larger than in the corresponding time of 1928. Gulf Coast production was up 3,463,000 barrels, or 19.1 per cent.

Oklahoma's production this year was 7,931,000 barrels or 8.05 per cent larger. Inland Texas production was up 11,741,000 barrels or 13.48 per cent. Total Mid-Continent production was 12,934,000 barrels or 5.75 per cent more this year than last. Part of the increase in Oklahoma and Texas was offset by declines in Kansas, Arkansas and north Louisiana.

In the eastern fields total production the first five months increased more than 500,000 barrels in Pennsylvania and Michigan and more than 300,000 barrels in New York. Michigan production has now reached an average of 7500 barrels a day as compared with 1500 barrels a year ago.

Daily average production in the leading fields or pools in May and April compare:

	May Bbls.	April Bbls.
Seminole-St. Louis	405,000	396,000
West Texas	376,000	365,000
Long Beach	175,000	190,000
Santa Fe Springs	182,000	158,000

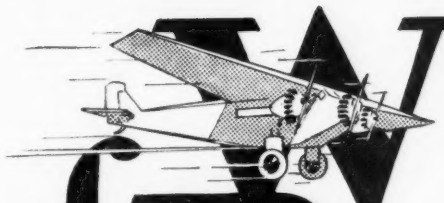
Daily average imports of crude oil were less in May than in April by 17,300 barrels average. Receipts from Venezuela were down 7600 barrels daily average and from Colombia down 16,700 barrels daily average. In the first five months of 1929, im-

Crude Oil Imports—Barrels

Origin	May Daily Av.	April Daily Av.	Jan.-May 1929 Total	Jan.-May 1928 Total	% Change 1929 over 1928
Mexico	41,300	37,100	4,293,000	6,642,000	—35.36
Venezuela	165,800	173,400	25,676,000	18,222,000	+40.90
Colombia	27,600	44,300	5,725,000	5,484,000	+ 4.39
Other countries	8,900	6,100	1,567,000	1,105,000	+41.81
Total	243,600	260,900	37,261,000	31,453,000	+18.46

Crude Oil Exports—Barrels

Destination	May Daily Av.	April Daily Av.	Jan.-May 1929 Total	Jan.-May 1928 Total	% Change 1929 over 1928
Canada	55,800	42,600	7,118,000	5,336,000	+33.39
Other countries	6,500	14,900	1,760,000	1,458,000	+20.71
Total	62,300	57,500	8,878,000	6,794,000	+30.65



Wings of Progress

MODERN refining keeps pace with the tempo of fast-changing marketing conditions and improved methods in the manufacture of petroleum products.

Anderson-Prichard Oil Corporation, associated with Col-Tex Refining Company, maintains an experienced technical department of outstanding chemists and engineers, who are constantly alert to every progressive trend in the refining industry. Our technical staff is now spending in excess of $1,500,000.00 in refinery improvements and installing the most modern cracking facilities.

At our Cyril, Oklahoma, plant we have rebuilt a large part of the special Industrial Naphtha Department to meet the ever increasing demand for our nationally known Industrial Naphthas; we have also installed at Cyril a complete cracking plant entirely separate from our manufacture of naphthas. This plant will crack the heavy gas oils into volatile anti-knock motor gasolines.

At our Col-Tex plant, Colorado, Texas, with a daily crude capacity of 10,000 barrels, we are completing installation of the most modern cracking process available for refining Col-Tex gasoline—already well known throughout the trade territory for its volatile anti-knock virtues.

We are now prepared to solicit inquiries from jobbers concerning our new co-operative marginal contracts on all grades of gasoline, industrial naphthas, kerosenes, furnace oils, gas oils, fuel oils and road oils.

ANDERSON-PRICHARD OIL CORPORATION
COL-TEX REFINING COMPANY

PRODUCERS AP REFINERS

OKLAHOMA CITY, OKLA.

Address all communications to Oklahoma City offices

Look for our future announcements in this publication

Crude Oil Production by States and Fields—Barrels

	May 1929 Daily Avg.	April 1929 Daily Avg.	May 1928 Daily Avg.	Jan.-May 1929 Total	Jan.-May 1928 Total	1929 Change Over 1928
California	775,900	776,500	623,600	117,360,000	93,797,000	+25.13
Gulf Coast Louisiana	18,300	19,300	14,900	2,993,000	2,167,000	+38.12
Gulf Coast Texas	130,500	131,900	114,100	18,597,000	15,960,000	+16.52
Total Gulf Coast	148,800	151,200	129,000	21,590,000	18,127,000	+19.10
Total Coastal	924,700	927,700	752,600	138,950,000	111,924,000	+24.15
Colorado	7,100	6,200	7,200	1,012,000	1,149,000	—11.92
Montana	8,800	8,700	10,800	1,395,000	1,732,000	—19.46
New Mexico	3,100	2,600	2,300	408,000	367,000	+11.17
Wyoming	50,600	50,800	61,500	7,622,000	8,710,000	—12.50
Total Rocky Mountain	69,600	68,300	81,800	10,437,000	11,958,000	—12.72
Arkansas	71,900	74,400	91,600	11,273,000	13,226,000	—14.77
Kansas	122,400	112,700	110,500	16,023,000	16,992,000	— 5.70
Oklahoma	701,400	686,200	634,300	106,416,000	98,485,000	+ 8.05
North Louisiana	34,400	34,800	43,100	5,219,000	6,670,000	—21.75
Inland Texas	673,600	648,800	595,700	98,853,000	87,112,000	+13.48
Total Southwestern	1,603,700	1,556,900	1,475,200	237,784,000	224,850,000	+ 5.75
Illinois	17,700	15,200	18,500	2,567,000	2,703,000	— 5.03
Indiana	2,700	2,700	2,900	420,000	410,000	+ 2.44
Ohio	18,700	18,700	20,900	2,700,000	2,972,000	— 9.15
Kentucky	20,500	19,500	21,000	2,874,000	2,993,000	— 3.98
Pennsylvania	32,800	31,300	28,000	4,529,000	4,019,000	+12.69
West Virginia	15,800	15,500	16,900	2,290,000	2,406,000	— 4.82
New York	9,300	9,200	6,900	1,328,000	974,000	+36.34
Michigan	7,500	5,200	1,500	823,000	174,000	+372.99
Tennessee	100	100	200	10,000	20,000	—50.00
Total Eastern	125,100	117,400	116,800	17,541,000	16,671,000	+ 5.22
GRAND TOTAL U. S.	2,723,100	2,670,300	2,426,400	404,712,000	365,403,000	+10.76

ports of crude oil were 5,808,000 barrels or 18.46 per cent larger than in the first five months of last year. Receipts from Venezuela were up 7,454,000 barrels or 40.9 per cent. Imports from Mexico were down 2,349,000 barrels or 35.36 per cent from imports last year.

Stocks of crude oil held in pipe lines and at tank farms were lowered 1,990,000 barrels in May. Stocks of foreign crude oil held elsewhere than at refineries were reduced 2000 barrels. Stocks of domestic and foreign crude at refineries were increased 828,000 barrels. In California light crude stocks were increased 2,538,000 barrels and heavy crude 1,349,000 barrels. Stocks of crude not on leases were increased 2,723,000 barrels.

Stocks of crude oil held by producers were estimated at 9,400,000 barrels May 31, a gain of 130,000 barrels in May. The gain in producers' stocks brings the total increase in stocks to 2,853,000 barrels in May.

Shipments of crude from California to eastern United States ports amounted to 95,000 barrels in May, making the total such shipments in the first five months of this year 491,000 barrels, as compared with 1,467,000 barrels in the corresponding months of 1928.

Runs to Stills

Daily average runs to stills of all oils were 1.01 per cent larger in May than in April and runs of crude oil averaged 1.54 per cent more. There was a decline of 6.37 per cent in runs of unfinished oils and of 0.14 per cent in average volume of natural gasoline used at refineries.

Runs of crude were increased more than 18,000 barrels daily in both the East Coast and Mid-Continent regions. Gulf Coast and Rocky Mountain crude runs were little changed and California refineries curtailed crude runs more than 4000 barrels daily. In the East Central states refineries increased crude oil charges more than 7000 barrels daily average. For the whole country the

Stocks of Crude Oil

Domestic Unless Otherwise Specified. Amounts in Thousands of Barrels

AT REFINERIES

	May 1929	April 1929	May 1928
East Coast:			
Domestic	9,367	9,442	7,778
Foreign	6,484	6,313	6,140
Appalachian	2,645	2,493	2,266
Indiana, Illinois, etc.	2,974	2,932	3,097
Oklahoma, Kansas, etc.	6,034	6,059	6,193
Texas Inland	2,464	2,150	1,790
Texas Gulf Coast:			
Domestic	9,492	9,016	8,110
Foreign	344	598	111
Ark. and Inland La.	1,470	1,223	797
Louisiana Gulf Coast:			
Domestic	3,391	3,311	4,722
Foreign	1,818	2,070	979
Rocky Mountain	2,075	2,123	1,430
U. S. East of Calif.	48,558	47,730	43,413

AT TANK FARMS, IN PIPE LINES AND ELSEWHERE THAN REFINERIES

(Reported by Field of Origin)

Appalachian	4,711	4,745	5,978
Kentucky	866	874	1,200
Lima-Indiana	854	979	1,234
Ill., S. W. Indiana	11,128	11,150	12,273
Okla., Kans., Tex., except coastal	245,021	245,478	237,666
N. La.-Ark.	23,278	24,867	26,370
Gulf coast	20,381	19,966	16,596
Rocky Mountain	24,462	24,632	27,130
East of Calif., pipe line and tank farm stocks	330,701	332,691	328,447
Foreign Crude:			
Atlantic ports	110	94	58
Gulf ports	173	191	51
Total refinery, pipe line and tank farm stocks east of Calif.	379,542	380,706	371,969
California:			
20° and lighter	29,088	26,500	19,170
Heavier than 20°	101,681	100,332	93,941
GRAND TOTAL	510,261	507,538	485,080

CLASSIFICATION BY GRAVITY

(East of California)

24° and lighter	332,011	331,301	320,381
Heavier than 24°	47,531	49,405	51,588

PRODUCERS' STOCKS

(Approximate)

East of Calif.	7,450	7,200	.....
California	1,950	2,070	.....

Runs to Stills—Barrels—Daily Average

Districts	CRUDE OIL May 1929	CRUDE OIL April 1929	UNFINISHED OIL May 1929	UNFINISHED OIL April 1929	NATURAL GASOLINE May 1929	NATURAL GASOLINE April 1929	TOTAL INPUT Daily Average May, 1929	TOTAL INPUT Daily Average April, 1929
Texas Gulf Coast: Domestic	400,032	400,300	25,387	16,667	19,452	21,333	444,871	438,300
Foreign	15,259	13,433	.....	.....	.....	.....	15,259	13,433
Louisiana Gulf Coast: Domestic	123,161	118,566	4,355	3,033	16,290	15,333	143,806	136,932
Foreign	22,323	27,766	.....	.....	.....	.....	22,323	27,766
Total Gulf Coast	560,775	560,065	29,742	19,700	35,742	36,666	626,259	616,431
East Coast: Domestic	282,870	278,466	34,774	42,300	7,452	9,600	325,096	330,366
Foreign	194,806	180,800	.....	.....	.....	.....	194,806	180,800
Total East Coast	477,676	459,266	34,774	42,300	7,452	9,600	519,902	511,166
California	640,581	644,633	8,903	18,633	44,806	45,267	694,290	708,533
Total Tide Water	1,679,032	1,663,964	73,419	80,633	88,000	91,533	1,840,451	1,836,130
Appalachian	98,065	97,267	4,225	4,133	1,000	1,167	103,290	102,567
Ind., Ill., Ky.	297,613	291,100	21,935	19,533	5,677	5,433	325,225	316,066
Total East Central	395,678	388,367	26,160	23,666	6,677	6,600	428,515	418,633
Oklahoma, Kans., Mo.	322,774	317,967	11,935	12,067	10,129	9,667	344,838	339,701
Inland Texas	181,839	167,467	2,419	12,333	5,097	4,533	189,355	184,333
No. La. and Ark.	70,968	71,500	5,161	433	4,066	3,500	80,194	75,433
Total Southwestern	575,581	556,934	19,515	24,833	19,291	17,700	614,387	599,467
Rocky Mountain	72,935	72,700	23,000	22,633	4,354	4,233	100,289	99,566
Total Inland	1,044,194	1,018,001	68,675	71,132	30,322	28,533	1,143,191	1,117,665
TOTAL UNITED STATES	2,723,226	2,681,965	142,094	151,765	118,322	120,066	2,983,642	2,953,796
Change May over April	+1.54%	.....	—6.37%	.....	—0.14%	.....	+1.01%	.....
Runs, May, 1928	2,493,900	.....	106,900	.....	92,000	.....	2,692,800	.....
Change Runs May 1929, over May, 1928	+9.59%	.....	+32.92%	.....	+28.61%	.....	+10.80%	.....

How Do *YOU* Clean Your Oil Drums?

Here is a partial list of oil companies using the Perfection Vacuum Unit

Florida
The Texas Co., Jacksonville

Illinois
W. H. Barber Oil Co., Chicago
Calumet Refining Co., Chicago
Johnson Oil Refining Co., Chicago Heights

Iowa
Riley Penn Oil Co., Burlington
Bartles-Shepherd Oil Co., Waterloo

Maryland
Sherwood Bros., Inc., Baltimore

Massachusetts
Underhay Oil Company, Boston

Minnesota
W. H. Barber Co., Minneapolis
Fred G. Clark Co., Minneapolis
Crescent Oil Co., Minneapolis
Manhattan Oil Co., Minneapolis
Midwest Oil Co., Minneapolis
R. A. Hyde Oil Co., Pipestone
Battenfield Grease & Oil Co., St. Paul
Northland Oil Co., St. Paul

Missouri
Barnsdall Refining Co., Kansas City

Montana
Lincoln Oil Co., Great Falls

New York
Smith Oil Co., Inc., Lowville
Anglo-Mexican Petroleum Co., New York City
C. E. Mills Oil Co., Syracuse

Ohio
Du Bois Oil Co., Bellaire
The Ohio Grease Co., Loudonville
Sun Oil Co., Toledo
Arrow Oil Co., Wooster

Pennsylvania
Kendall Refining Co., Bradford
The Aero Gasoline Co., Inc., Erie
Jos. B. Berry Sons Co., Inc., Oil City
Sun Oil Co., Philadelphia
Thompson & Co., Pittsburgh
Industrial Oil & Grease Co., Warren

Virginia
The Texas Co., Norfolk
South Atlantic Oil Co., Norfolk
Topping Oil Company, Williamsburg

West Virginia
Ohio Valley Refining Co., St. Marys

Canada
McColl Bros., Ltd., Toronto, Ont.
Shell Co. of Canada, Ltd., Toronto
Shell Co. of Canada, Ltd., Montreal
North Star Oil and Refining Co., Winnipeg

THE PERFECTION VACUUM UNIT

EVERY one wholesaling lubricating oils has the problem of cleaning the empty oil drums that are returned before re-filling with fresh oil. The Perfection Vacuum Unit shown in the illustration provides a very efficient means for doing this at a big saving in time and labor.

After steaming the inside of the drum, the suction pipe is inserted into the drum and the strong suction quickly draws the old oil and any other foreign matter into the tank of the Vacuum Unit. The gauge glass on the side of the tank shows when the tank is about half full. The tank can then be drained and the drainings piped to a settling tank if it is desired to reclaim the oil.

The Perfection Vacuum Pump has 14 years of satisfactory service behind it as a guarantee of its efficiency, durability, and economy of operation.

Write for further information and prices.

Ask us also for information about our Rotary Pumps for unloading or transferring gasoline or oils at bulk plants.

Perfection Manufacturing Company

2194 East Hennepin Avenue **Minneapolis, Minn.**

Natural Gasoline and Motor Blends — Barrels

Districts	Daily Avg. Production May (net)	Daily Avg. Production April (net)	Stocks End of May	Stocks End of April	Motor Fuel Blends Made in May	Motor Fuel Blends Made in April	Stocks Blends End of May	Stocks Blends End of April	Districts
Appalachian	6,144	6,508	78,167	74,214	5,429	4,357	5,952	5,857	Appalachian
Ill., Ky., etc.	922	952	9,905	7,167	71	48	286	262	Ill., Ky., etc.
Seminole, etc.	23,272	23,095	110,738	97,167	24,190	18,119	2,595	2,738	Seminole, etc.
Osage County	5,146	5,794	309,500	274,952	214	214	71	71	Osage County
Rest of State	16,590	16,349	245,142	208,690	74,571	71,167	10,071	8,119	Rest of State
Total Oklahoma	45,008	45,238	665,380	580,809	98,975	89,500	12,737	10,928	Total Oklahoma
Kansas	2,304	2,381	43,571	31,905	810	857	190	214	Kansas
Panhandle	10,292	10,556	298,548	214,595	11,857	13,929	976	1,976	Panhandle
North Texas	3,226	3,333	33,119	33,071	3,905	3,381	714	929	North Texas
West Central	9,908	10,000	165,143	142,523	4,167	5,928	1,595	2,190	West Central
Rest of Texas	2,765	2,619	16,619	11,309	2,047	1,286	333	262	Rest of Texas
Total Texas	26,191	26,508	513,429	401,498	21,976	24,524	3,618	5,357	Total Texas
Louisiana	3,763	3,109	23,429	22,429	667	500	286	238	Louisiana
Arkansas	2,074	2,143	6,762	7,285	15,643	15,334	595	952	Arkansas
Rocky Mountain	3,303	3,174	15,595	11,785	.....	.....	.....	.....	Rocky Mountain
Long Beach	14,977	16,190	.....	.....	.....	.....	.....	.....	Long Beach
Ventura Ave.	4,992	4,921	.....	.....	.....	.....	.....	.....	Ventura Ave.
Seal Beach	2,842	3,016	.....	.....	.....	.....	.....	.....	Seal Beach
Huntington Beach	2,611	2,698	.....	.....	.....	.....	.....	.....	Huntington Beach
Santa Fe Springs	12,750	12,302	.....	.....	.....	.....	.....	.....	Santa Fe Springs
Rest of California	12,212	12,381	.....	.....	.....	.....	.....	.....	Rest of California
Total California	50,384	51,508	34,214	29,000	.....	.....	.....	.....	Total California
Total U. S.	140,093	141,521	1,390,452	1,166,092	143,571	135,120	23,664	23,594	Total U. S.

increase was 41,301 barrels daily average of crude.

The crude oil charges in May, 1929, were 9.59 per cent larger than in May, 1928. Runs of both unfinished oils and natural gasoline were considerably larger this year, bringing the average runs of all classes of charging stock to 10.8 per cent over runs in May, 1928.

Gasoline

Output of gasoline was curtailed only in Gulf Coastal Louisiana, the Rocky Mountain and California districts. The decline in California output was sufficient to bring the average for the United States coastal states plants a little under the April average but increased output at the inland plants brought the total up to an average of 1,169,999 barrels a day, an increase of 15,466 barrels or 1.34 per cent over the April average.

Shipments of gasoline slumped in only the Coastal Louisiana and inland Texas plants. Stocks were increased at only the north Louisiana-Arkansas refineries. Only in California were stocks smaller May 31, 1929, than a year before.

Cracking was increased in May. Of the gasoline produced, 32 per cent was by cracking as compared with 31 per cent in April. The relative volume of straight run gasoline was reduced from 59 per cent in April to 58 per cent of the total gaso'ine production in May. The relative volume of natural gasoline used was unchanged at 10 per cent.

During May 1,498,000 barrels of California gasoline was shipped to eastern United States ports. Shipments of California gasoline to east-

Gasoline Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1928	27,981,000	562,000	3,713,000	20,778,000	37,368,000
February	26,856,000	372,000	3,341,000	21,402,000	39,853,000
March	29,276,000	259,000	4,016,000	24,294,000	41,078,000
April	29,317,000	472,000	4,111,000	25,567,000	41,189,000
May	30,825,000	368,000	5,812,000	28,346,000	38,224,000
Total Five Months	144,255,000	2,033,000	20,993,000	120,387,000	38,224,000
June	30,703,000	212,000	4,808,000	29,469,000	34,862,000
July	32,974,000	267,000	5,167,000	32,542,000	30,394,000
August	34,101,000	479,000	4,563,000	33,336,000	27,075,000
September	33,669,000	193,000	4,837,000	29,722,000	26,378,000
October	34,403,000	388,000	4,049,000	30,680,000	26,440,000
November	33,171,000	304,000	4,678,000	26,052,000	29,185,000
December	33,907,000	420,000	3,802,000	26,644,000	33,066,000
1928 Total	377,183,000	4,296,000	52,897,000	328,832,000	33,066,000
January, 1929	34,335,000	499,000	4,650,000	22,602,000	40,648,000
February	31,264,000	406,000	3,838,000	22,776,000	45,704,000
March	34,467,000	327,000	4,798,000	27,495,000	48,205,000
April	34,636,000	822,000	4,629,000	32,019,000	47,015,000
May	36,270,000	729,000	5,249,000	34,117,000	44,648,000
Total Five Months	170,972,000	2,783,000	23,164,000	139,009,000	44,648,000
Change This Year Over Like Period Last Year	+26,617,000	+750,000	+2,171,000	+18,622,000	+6,424,000
Per Cent	+18.45	+36.89	+12.46	+15.46	+16.86

Gasoline Situation by Districts — Barrels

Districts	May 1929 Daily Avg. Output	April 1929 Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1929	Stocks April 1929	Stocks May 1928	Districts
Gulf Coast Texas	189,935	186,900	+ 1.62	314,258	200,466	+56.76	5,576,000	5,915,000	5,216,000	Gulf Coast Texas
Gulf Coast Louis.	62,903	63,100	— 0.31	71,193	80,700	—11.78	2,061,000	2,318,000	1,327,000	Gulf Coast Louis.
Total Gulf	252,838	250,000	+ 1.14	385,451	281,166	+37.09	7,637,000	8,233,000	6,543,000	Total Gulf
East Coast	154,742	150,167	+ 3.05	164,645	150,700	+ 9.25	7,218,000	7,525,000	6,312,000	East Coast
California	235,000	243,733	— 3.58	240,935	219,400	+ 9.82	11,839,000	12,023,000	12,862,000	California
Total Coastal	642,580	643,900	— 0.20	791,031	651,266	+21.46	26,694,000	27,781,000	25,717,000	Total Coastal
Appalachian	45,742	44,867	+ 1.95	50,645	50,100	+ 1.09	1,698,000	1,850,000	1,157,000	Appalachian
Ind., Ill., Ky., etc.	176,258	169,667	+ 3.88	200,258	188,100	+ 6.46	7,118,000	7,862,000	5,030,000	Ind., Ill., Ky., etc.
Total East Cent.	222,000	214,534	+ 3.48	250,903	238,200	+ 5.33	8,816,000	9,712,000	6,187,000	Total East Cent.
Okla., Kans., Mo.	168,677	166,033	+ 1.59	176,419	173,600	+ 1.62	5,382,000	5,622,000	3,441,000	Okla., Kans., Mo.
Inland Texas	65,000	61,700	+ 5.35	65,935	93,967	—29.83	989,000	1,018,000	730,000	Inland Texas
No. La. and Ark.	24,097	20,500	+17.54	22,484	20,967	+ 7.24	307,000	257,000	91,000	No. La. and Ark.
Total Southwest.	257,774	248,233	+ 3.84	264,838	288,534	— 8.21	6,678,000	6,897,000	4,262,000	Total Southwest.
Rocky Mountain	47,645	47,866	— 0.46	52,968	49,466	+ 7.08	2,460,000	2,625,000	2,058,000	Rocky Mountain
Total Inland	527,419	510,633	+ 3.29	568,709	576,200	— 1.30	17,954,000	19,234,000	12,507,000	Total Inland
TOTAL U. S.	1,169,999	1,154,533	+ 1.34	1,359,740	1,227,466	+10.77	44,648,000	47,015,000	38,224,000	TOTAL U. S.
Imports	23,516	27,400	—16.52	.....	.....	.....	.....	.....	.....	Imports
Exports	.....	.....	.....	169,322	154,300	+ 9.74	.....	.....	.....	Exports
Average new supply	1,193,515	1,181,933	+ 0.98	.....	.....	.....	.....	.....	.....	Avg. new supply
Avg. ship. to dom. distrib. or users	.....	.....	.....	1,190,418	1,073,166	+10.92	.....	.....	.....	Avg. ship. to dom. distributors or users

5 PERTINENT P's

To Consider In Buying Petroleum Products

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Power at your command. Power—to meet the motorist's demands. Power—to overcome sales resistance by exhibiting the sign of power which is embodied in Kanotex Gasoline.

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The KANOTEX REFINING COMPANY

ARKANSAS CITY, KANSAS

Kerosene Situation by Districts — Barrels

Districts	May 1929 Daily Avg. Output	April 1929 Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1929	Stocks April 1929	Stocks May 1929	Districts
Gulf Coast Texas..	26,903	17,833	+50.86	22,903	20,167	+13.56	1,328,000	1,204,000	1,162,000	..Gulf Coast Texas
Gulf Coast Louis...	11,677	12,533	— 6.83	8,806	17,467	—49.58	615,000	526,000	1,468,000	..Gulf Coast Louis.
Total Gulf.....	38,580	30,366	+27.05	31,709	37,634	—15.74	1,943,000	1,730,000	2,630,000	.....Total Gulf
East Coast.....	22,548	24,767	— 8.96	21,000	24,933	—15.77	1,196,000	1,148,000	1,617,000	.....East Coast
California.....	27,258	23,933	+13.89	26,161	26,833	— 2.50	2,764,000	2,730,000	1,434,000	.....California
Total Coastal....	88,386	79,066	+11.79	78,870	89,400	—11.78	5,903,000	5,608,000	5,681,000	....Total Coastal
Appalachian.....	9,806	9,900	— 0.95	9,484	10,700	—11.36	272,000	262,000	244,000	.....Appalachian
Ind., Ill., Ky., etc...	14,774	14,700	+ 0.50	14,419	15,667	— 7.97	639,000	628,000	773,000	..Ind., Ill., Ky., etc.
Total East Cent.	24,580	24,600	— 0.08	23,903	26,367	— 9.35	911,000	890,000	1,017,000	Total East Cent.
Okla., Kans., Mo...	28,709	30,333	— 5.35	31,677	28,233	+12.20	566,000	658,000	485,000	..Okla., Kans., Mo.
Inland Texas.....	8,903	8,333	+ 6.84	8,065	7,667	+ 5.19	139,000	113,000	80,000	.....Inland Texas
No. La. and Ark...	1,194	1,800	—33.66	1,452	1,633	—11.08	20,000	28,000	27,000	..No. La. and Ark.
Total Southwest.	38,806	40,466	— 4.10	41,194	37,633	+ 9.46	725,000	799,000	592,000	.Total Southwest.
Rocky Mountain...	6,353	3,667	+73.25	6,258	6,433	— 2.72	203,000	200,000	247,000	..Rocky Mountain
Total Inland....	68,963	68,763	+ 0.29	71,355	70,433	+ 1.31	1,839,000	1,889,000	1,856,000	....Total Inland
TOTAL U. S....	158,125	147,829	+ 6.97	150,225	159,833	— 6.01	7,742,000	7,497,000	7,537,000	...TOTAL U. S.
Imports.....	194	700	—72.29	.....	.....	.....	.....	.....	.....	.....Imports
Exports.....	.....	.....	.....	47,194	55,233	—14.55	.....	.....	.....	.....Exports
Average new supply	158,319	148,529	+ 6.59	.....	.....	.....	.....	.....	.....	..Avg. new supply
Avg. ship. to dom. distributors or users	.....	.....	.....	103,031	104,600	— 1.50	.....	.....	.....	Avg. ship. to dom. distributors or users

ern ports totaled 8,716,000 barrels in the first five months of 1929, as compared with 5,700,000 barrels in the first five months of 1928.

Natural Gasoline

There was a small decline in the average daily production of natural gasoline in May due chiefly to a shrinkage in the Long Beach field of California. Stocks of natural gasoline increased 224,360 barrels.

Production of natural gasoline blended motor fuel elsewhere than at refineries was 8000 barrels total more than the April output but stocks increased only 70 barrels.

Kerosene

Production of kerosene in May was up 468,000 barrels over April. Stocks advanced 245,000 barrels. Domestic shipments for May were up 44,000 barrels, and exports were down 194,000 barrels.

Stocks May 31 were 205,000 barrels or 2.71 per cent larger than stocks May 31, 1928. There was a decline in production in the first five months of 1929 of 8.35 per cent from production in the corresponding period of 1928. In the same period domestic shipments were up 3.05 per cent, exports off 1.40 per cent, and imports were up 7.14 for 1929.

Daily average output in May was 158,125 barrels for the country, an increase of 6.59 per cent over April. Daily average shipments in May were 150,225 barrels, a decline of 6.01 per cent from April shipments. Average daily shipments to domestic consumers were 103,031 barrels and exports 47,194 barrels.

Kerosene Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1928.....	5,058,000	46,000	2,350,000	2,799,000	7,670,000
February.....	4,749,000	11,000	1,551,000	3,266,000	7,613,000
March.....	4,715,000	6,000	1,852,000	2,722,000	7,760,000
April.....	5,033,000	20,000	1,912,000	3,168,000	7,733,000
May.....	5,243,000	1,000	2,057,000	3,383,000	7,537,000
Total Five Months.....	24,798,000	84,000	9,722,000	15,338,000	7,537,000
June.....	4,849,000	24,000	1,655,000	2,323,000	8,432,000
July.....	4,994,000	19,000	1,834,000	3,141,000	8,470,000
August.....	5,389,000	2,000	1,678,000	3,296,000	8,887,000
September.....	5,060,000	.....	2,090,000	3,264,000	8,593,000
October.....	5,190,000	55,000	1,755,000	3,469,000	8,614,000
November.....	4,908,000	.....	2,091,000	2,545,000	8,886,000
December.....	4,968,000	20,000	1,241,000	3,632,000	9,001,000
1928 Total.....	60,156,000	204,000	22,066,000	38,008,000	9,001,000
January, 1929.....	4,700,000	38,000	1,918,000	2,956,000	8,865,000
February.....	4,435,000	20,000	1,591,000	3,519,000	8,210,000
March.....	4,515,000	5,000	1,899,000	2,976,000	7,855,000
April.....	*4,434,000	21,000	1,657,000	3,156,000	7,497,000
May.....	4,902,000	6,000	1,463,000	3,200,000	7,742,000
Total Five Months.....	22,886,000	90,000	8,528,000	15,807,000	7,742,000
Change This Year Over Like Period Last Year.....	—1,912,000	+6,000	—1,194,000	+469,000	+205,000
Per Cent.....	—8.35	+7.14	—1.40	+3.05	+2.71

Lubricating Oils

An addition of 29,000 barrels was

(*Continued on Page* 101)

Gas and Fuel Oil Situation by Districts — Barrels

Districts	May 1929 Daily Avg. Output	April Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1929	Stocks April 1929	Stocks May 1929	Districts
Gulf Coast Texas..	169,161	168,167	+ 0.59	159,064	170,300	— 6.60	8,849,000	8,556,000	7,369,000	..Gulf Coast Texas
Gulf Coast Louis...	54,645	60,367	— 6.16	44,935	37,967	+18.35	5,150,000	4,880,000	4,597,000	..Gulf Coast Louis.
Total Gulf.....	223,806	228,534	— 2.06	203,999	208,267	— 2.05	13,999,000	13,436,000	11,966,000	.....Total Gulf
East Coast.....	260,419	251,133	+ 3.69	249,903	213,433	+17.18	6,057,000	5,731,000	8,950,000	.....East Coast
California.....	368,806	382,900	— 3.68	.....	.....	.....	.....	.....	.....	.....California
Total Coastal....	853,031	862,567	— 1.10	*453,902	*421,700	*+ 7.53	20,056,000	19,167,000	20,916,000	....Total Coastal
Appalachian.....	20,129	22,533	—10.66	22,258	22,366	— 0.48	963,000	1,029,000	1,019,000	.....Appalachian
Ind., Ill., Ky., etc...	95,710	95,500	+ 0.22	88,484	86,101	+ 2.77	2,610,000	2,386,000	2,033,000	..Ind., Ill., Ky., etc.
Okla., Kans., Mo...	110,709	106 867	+ 3.59	89,742	85,766	+ 4.64	5,966,000	5,316,000	5,230,000	..Okla., Kans., Mo.
Inland Texas.....	97,968	101,633	— 3.60	88,516	87,933	+ 0.66	3,422,000	3,129,000	1,754,000	.....Inland Texas
N. La. and Ark.....	43,935	42,667	+ 2.97	43,774	38,367	+14.09	1,428,000	1,291,000	860,000	....N. La. and Ark.
Rocky Mountain...	22,710	19,333	+17.46	18,323	19,000	— 3.46	1,191,000	1,086,000	1,075,000	...Rocky Mountain
Total Inland....	391,161	388,533	+ 0.67	351,097	339,533	+ 3.40	15,580,000	14,237,000	11,971,000	....Total Inland
TOTAL U. S.....	1,244,192	1,251,100	— 0.55	*804,999	*761,233	*+ 5.74	35,636,000	33,404,000	32,887,000	....TOTAL U. S.
Imports.....	63,968	59,266	+ 7.93	.....	.....	.....	.....	.....	.....	.....Imports
Exports.....	.....	.....	.....	100,000	96,400	+ 3.73	.....	.....	.....	.....Exports
Avg. new supply...	1,308,160	1,310,366	— 0.16	.....	.....	.....	.....	.....	.....	....Avg. new supply
Avg. ship. to dom. distributors or users	.....	.....	.....	*704,999	*664,833	*+36.12	.....	.....	.....	Avg. ship. to dom. distributors or users

*Exclusive of California

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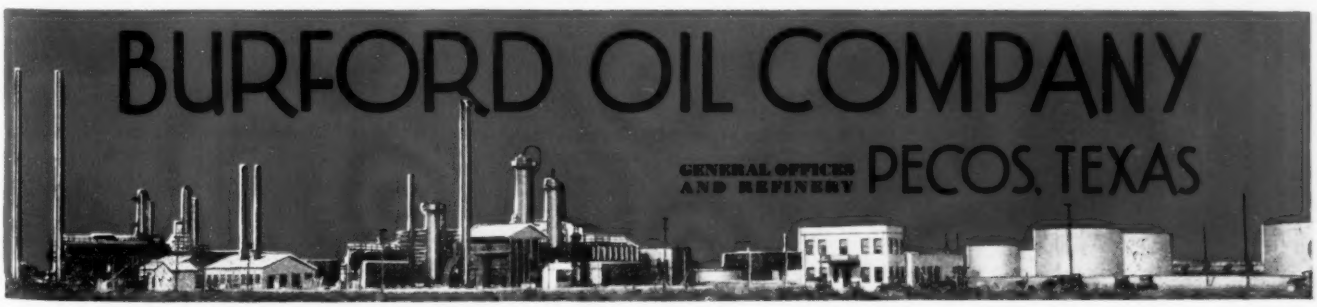

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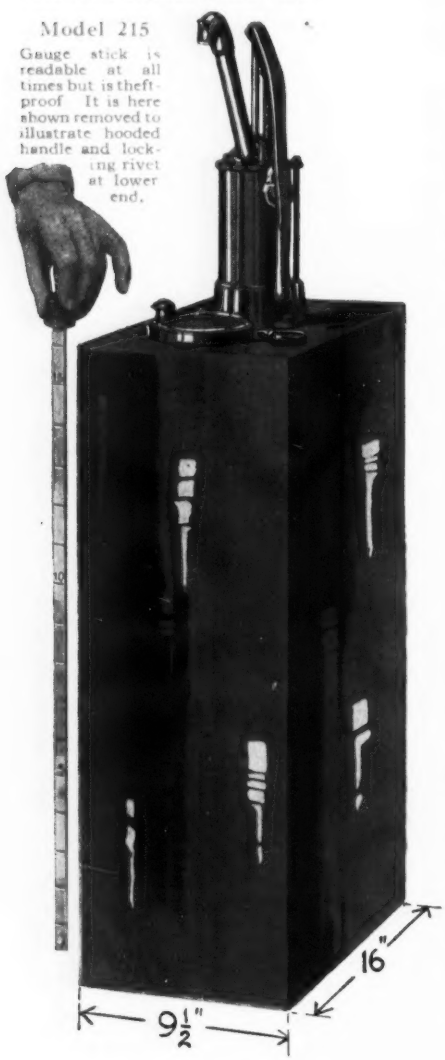
Model 215

Gauge stick is readable at all times but is theft-proof. It is here shown removed to illustrate hooded handle and locking rivet at lower end.



Gas and Fuel Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	*Stocks End of Month
January, 1928	33,013,000	553,000	4,175,000	.....	30,665,000
February	31,897,000	666,000	3,420,000	.....	29,560,000
March	34,437,000	848,000	3,969,000	.....	29,104,000
April	33,870,000	1,176,000	4,211,000	.....	29,669,000
May	35,620,000	784,000	3,612,000	.....	32,887,000
Total Five Months	168,837,000	4,027,000	19,387,000	.....	32,887,000
June	35,765,000	468,000	4,238,000	.....	36,085,000
July	36,754,000	484,000	4,261,000	.....	36,410,000
August	37,390,000	515,000	3,420,000	.....	39,236,000
September	37,004,000	397,000	3,226,000	.....	39,900,000
October	36,941,000	320,000	3,356,000	.....	39,599,000
November	35,771,000	411,000	3,320,000	.....	37,878,000
December	37,293,000	646,000	3,254,000	.....	34,926,000
1928 Total	425,755,000	7,268,000	44,462,000	.....	34,926,000
January, 1929	36,838,000	335,000	3,699,000	.....	32,522,000
February	34,331,000	466,000	2,795,000	.....	30,118,000
March	37,456,000	1,146,000	2,600,000	.....	30,195,000
April	37,533,000	1,778,000	2,892,000	.....	33,404,000
May	38,570,000	1,983,000	3,100,000	.....	35,636,000
Total Five Months	184,738,000	5,708,000	15,086,000	.....	35,636,000
Change This Year Over Like Period					
Last Year	+15,901,000	+1,681,000	—4,301,000	.....	+2,749,000
Per Cent	+9.41	+41.7	—28.5	.....	+8.36

*East of California only.

Lubricating Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1928	2,654,000	.....	934,000	1,592,000	7,988,000
February	2,728,000	.....	841,000	1,543,000	8,332,000
March	2,878,000	.....	837,000	1,990,000	8,383,000
April	3,027,000	1,000	1,059,000	2,334,000	8,018,000
May	3,091,000	3,000	1,063,000	1,989,000	8,060,000
Total Five Months	14,378,000	4,000	4,734,000	9,448,000	8,060,000
June	3,009,000	1,000	1,095,000	2,143,000	7,832,000
July	2,828,000	1,000	1,063,000	1,931,000	7,667,000
August	2,891,000	1,000	813,000	2,035,000	7,711,000
September	2,833,000	1,000	808,000	1,995,000	7,742,000
October	2,979,000	1,000	769,000	2,123,000	7,830,000
November	2,748,000	1,000	895,000	1,763,000	7,921,000
December	2,993,000	3,000	878,000	1,699,000	8,340,000
1928 Total	34,659,000	13,000	11,055,000	23,137,000	8,340,000
January, 1929	2,945,000	1,000	1,116,000	1,521,000	8,649,000
February	2,503,000	4,000	871,000	1,751,000	8,534,000
March	2,943,000	2,000	1,045,000	1,581,000	8,853,000
April	2,899,000	3,000	786,000	2,628,000	8,341,000
May	3,005,000	4,000	844,000	2,322,000	8,370,000
Total Five Months	14,295,000	14,000	4,662,000	9,803,000	8,370,000
Change This Year Over Like Period					
Last Year	—83,000	+10,000	—72,000	+355,000	+310,000
Per Cent	—.005	+250.00	—.015	+.375	+3.84

Paraffin Wax Supply and Demand — Pounds

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1928	55,378,000	1,117,000	39,712,000	17,696,000	149,725,000
February	49,158,000	1,337,000	38,036,000	25,705,000	136,479,000
March	50,170,000	1,767,000	40,147,000	28,747,000	119,522,000
April	57,548,000	2,996,000	34,122,000	36,235,000	109,709,000
May	51,072,000	1,855,000	34,826,000	24,171,000	103,639,000
Total Five Months	263,326,000	9,072,000	186,843,000	132,554,000	103,639,000
June	50,792,000	1,715,000	33,594,000	30,563,000	91,989,000
July	45,273,000	2,226,000	35,290,000	19,722,000	84,476,000
August	54,429,000	2,793,000	31,446,000	30,630,000	79,622,000
September	50,428,000	1,880,000	26,396,000	20,117,000	85,417,000
October	54,546,000	1,930,000	26,281,000	22,798,000	92,814,000
November	56,665,000	2,994,000	25,170,000	23,354,000	103,949,000
December	54,685,000	2,138,000	26,603,000	23,825,000	110,344,000
1928 Total	630,144,000	24,748,000	391,623,000	303,563,000	110,344,000
January, 1929	58,885,000	2,982,000	28,065,000	20,625,000	123,521,000
February	50,027,000	3,120,000	25,359,000	11,256,000	140,053,000
March	56,372,000	2,575,000	22,127,000	18,469,000	158,404,000
April	57,976,000	2,680,000	22,664,000	25,709,000	170,687,000
May	53,783,000	2,748,000	18,662,000	29,417,000	179,139,000
Total Five Months	277,043,000	14,105,000	116,877,000	105,476,000	179,139,000
Change This Year Over Like Period					
Last Year	+13,717,000	+5,033,000	—89,966,000	—27,078,000	+75,500,000
Per Cent	+5.20	+55.4	—76.9	—25.6	+72.8

made to stocks of lubricating oils in May, halting the drafts on stocks which occurred in April for the second consecutive year.

In 1928 stocks were lowered in April. A gain of 42,000 barrels was recorded in May, followed by drafts until September. In 1929 the stock high was in March, followed by a decline in April, and an addition in May.

Domestic shipments for May were down 306,000 barrels from April shipments. Production was up 106,000 barrels to 3,005,000 barrels. Exports increased 58,000 barrels and imports 1000 barrels.

May 31, 1929, stocks were up 310,000 barrels, or 3.84 per cent, over May 31, 1928, stocks.

Considering the first five months, domestic shipments were almost on an even keel for 1928 and 1929, showing an increase this year of only 0.375 per cent. For the same period production varied only 83,000 barrels, or 0.005 per cent, with 1928 leading 1929. Exports for the first five months were 0.015 per cent less than in 1928, while imports, of little consequence, gained 250 per cent this year.

Paraffin Wax

Stocks of paraffin wax were increased in May by 8,452,000 pounds to 179,139.000 pounds. A fall in production of 4,000,000 pounds in May from April production was offset by a decline in exports of approximately the same amount. Domestic shipments for May were up 3,708,000 pounds. Imports gained 68,000 pounds.

At the end of May stocks were 75,500,000 pounds, or 72.8 per cent, larger than May 31, 1928, stocks. Domestic shipments in the first five months slumped by 25.6 per cent from shipments in the corresponding period last year and exports fell 76.9 per cent. Domestic production was up 13,717,000 pounds or 5.20 per cent and imports increased 5,033,000 pounds or 55.4 per cent.

Gas and Fuel Oils

Daily average output of gas and fuel oils was curtailed 6908 barrels at refineries in May as compared with April output. The smaller output was at Gulf Coastal Louisiana, California, Appalachian, and inland Texas plants.

Shipments of gas and fuel oil from refineries east of California were larger than April shipments at the Gulf Coastal Louisiana, East Coast, Illinois-Indiana-Kentucky, Oklahoma-Kansas-Missouri, Inland Texas, and Louisiana-Arkansas districts.

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Lubricant Situation by Districts — Barrels

Districts	May 1929 Daily Avg. Output	April 1929 Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1929	Stocks April 1929	Stocks May 1928	Districts
Gulf Coast Texas	23,806	21,000	+13.36	24,161	23,167	+ 4.[illegible]	2,113,000	2,124,000	1,647,000	Gulf Coast Texas
Gulf Coast Louis.	2,097	2,800	—25.11	2,065	2,300	—10[illegible]	125,000	124,000	123,000	Gulf Coast Louis.
Total Gulf	25,903	23,800	+ 8.84	26,226	25,467	+ 2.	2,238,000	2,248,000	1,770,000	Total Gulf
East Coast	27,774	30,233	— 8.11	31,323	32,867	— 4.70	2,719,000	2,829,000	2,852,000	East Coast
California	5,452	5,633	— 3.21	5,452	5,200	+ 4.85	905,000	905,000	772,000	California
Total Coastal	59,129	59,666	— 0.90	63,001	63,534	— 0.84	5,862,000	5,982,000	5,394,000	Total Coastal
Appalachian	16,258	14,500	+12.12	10,806	21,767	—50.36	1,187,000	1,018,000	1,093,000	Appalachian
Ind., Ill., Ky., etc.	10,839	11,200	— 3.22	10,581	14,233	—25.66	659,000	651,000	815,000	Ind., Ill., Ky., etc.
Okla., Kans., Mo.	7,451	7,767	— 4.07	8,064	9,667	—16.58	449,000	468,000	544,000	Okla., Kans., Mo.
Inland Texas	968	1,200	—19.33	1,484	1,267	+17.12	47,000	63,000	81,000	Inland Texas
N. La. and Ark.	516	568	— 9.15	548	501	+ 9.38	5,000	6,000	2,000	N. La. and Ark.
Rocky Mountain	1,774	1,733	+ 2.37	1,516	2,733	—44.53	161,000	153,000	131,000	Rocky Mountain
Total Inland	37,806	36,968	+ 2.27	32,999	50,168	—34.22	2,508,000	2,365,000	2,666,000	Total Inland
TOTAL U. S.	96,935	96,634	+ 0.31	96,000	113,702	—15.56	8,370,000	8,347,000	8,060,000	TOTAL U. S.
Imports	129	100	+29.00	.....	.....	.....	.....	.....	.....	Imports
Exports	.....	.....	.....	27,226	26,200	+ 3.92	.....	.....	.....	Exports
Avg. new supply	97,064	96,734	+ 0.34	.....	.....	.....	.....	.....	.....	Avg. new supply
Avg. ship. to dom. distributors or users	.....	.....	.....	68,774	87,502	—21.40	.....	.....	.....	Avg. ship. to dom. distributors or users

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)	
January, 1928	103,200	331,300	202,000	219,000	613,000	1,183,000	2,293,000	36,762,000	2,142,000	January, 1928
February	100,100	335,100	207,000	233,900	633,000	1,297,000	2,199,000	37,282,000	1,976,000	February
March	107,200	352,400	265,200	269,800	659,000	1,527,000	2,282,000	37,128,000	2,268,000	March
April	109,400	342,100	273,800	273,700	656,000	1,601,000	2,478,000	38,215,000	2,222,000	April
May	118,400	348,300	330,700	262,200	879,000	1,392,000	2,792,000	38,762,000	2,398,000	May
June	118,100	343,700	331,600	270,800	892,000	1,130,000	2,325,000	38,380,000	2,578,000	June
July	127,000	384,900	330,800	247,200	938,000	1,200,000	2,787,000	40,657,000	2,820,000	July
August	136,100	402,100	316,400	225,500	991,000	857,000	2,530,000	39,596,000	2,660,000	August
September	119,100	402,200	305,600	202,900	873,000	748,000	2,226,000	39,732,000	2,644,000	September
October	125,000	404,400	319,800	209,900	867,000	723,000	1,954,000	38,452,000	2,657,000	October
November	131,000	418,800	244,400	228,000	723,000	726,000	2,838,000	38,114,000	2,388,000	November
December	132,000	436,900	169,800	235,500	677,000	635,000	3,166,000	38,601,000	2,275,000	December
January, 1929	137,900	403,800	188,400	229,100	661,000	653,000	2,513,000	38,264,000	2,542,000	January, 1929
February	126,700	388,100	208,200	235,600	617,000	652,000	2,273,000	38,170,000	2,059,000	February
March	129,400	402,400	227,500	250,100	738,000	691,000	2,873,000	38,471,000	2,602,000	March
April	130,700	444,900	282,600	248,800	763,000	735,000	4,553,000	39,645,000	2,910,000	April
May	141,900	471,200	315,100	236,300	994,000	814,000	4,405,000	40,305,000	2,701,000	May

The gain in shipments amounted to 43,766 barrels daily average but stocks increased 2,202,000 barrels to 35,636,000 barrels east of California. California fuel oil stocks are consolidated with heavy crude oil stocks.

Production of fuel oil at refineries in the first five months of 1929 was 15,901,000 barrels or 9.41 per cent more than in the first five months of 1928. Imports were 1,681,000 barrels or 4.17 per cent larger this year, and exports were 4,301,000 barrels or 28.5 per cent smaller. Domestic demand figures are not available.

Auto Output Continues Ahead of Last Year

PHILADELPHIA, July 13.—*Automotive Industries* this week said:

"Motor car production reached a low ebb for the summer season to date in the first week of July because of the four-day holiday period. The industry resumed the second week, however, with schedules for the industry in general considerably ahead of the corresponding period of last year.

"Many executives who have held that the industry would experience a sharp recession in the second half of the year on account of the record business enjoyed during the first six months, have altered their opinions, and there is a general feeling that the great wave of car selling which prevailed throughout the portion of the year already passed, may carry over well into the remaining part.

"The volume of business up to this time has generally upset predictions, especially in the low-priced field. There was a feeling that as soon as Ford reached the high rate of production which he had attained with the Model T, that it would materially affect the market of other low-priced cars, especially Chevrolet and Whippet.

"In spite of Ford's tremendous business, however, which is now exceeding the best marks set by Model T production, Chevrolet and Whippet cars are also being produced at maximum capacity, and their record high production of last year is being exceeded by their activities so far this year.

"Cars in the other price fields also are enjoying a good market as a result of general prosperity, and the production outlook for July and August is very satisfactory to a majority of manufacturers."

Wadhams Helps Dealers Over the Radio

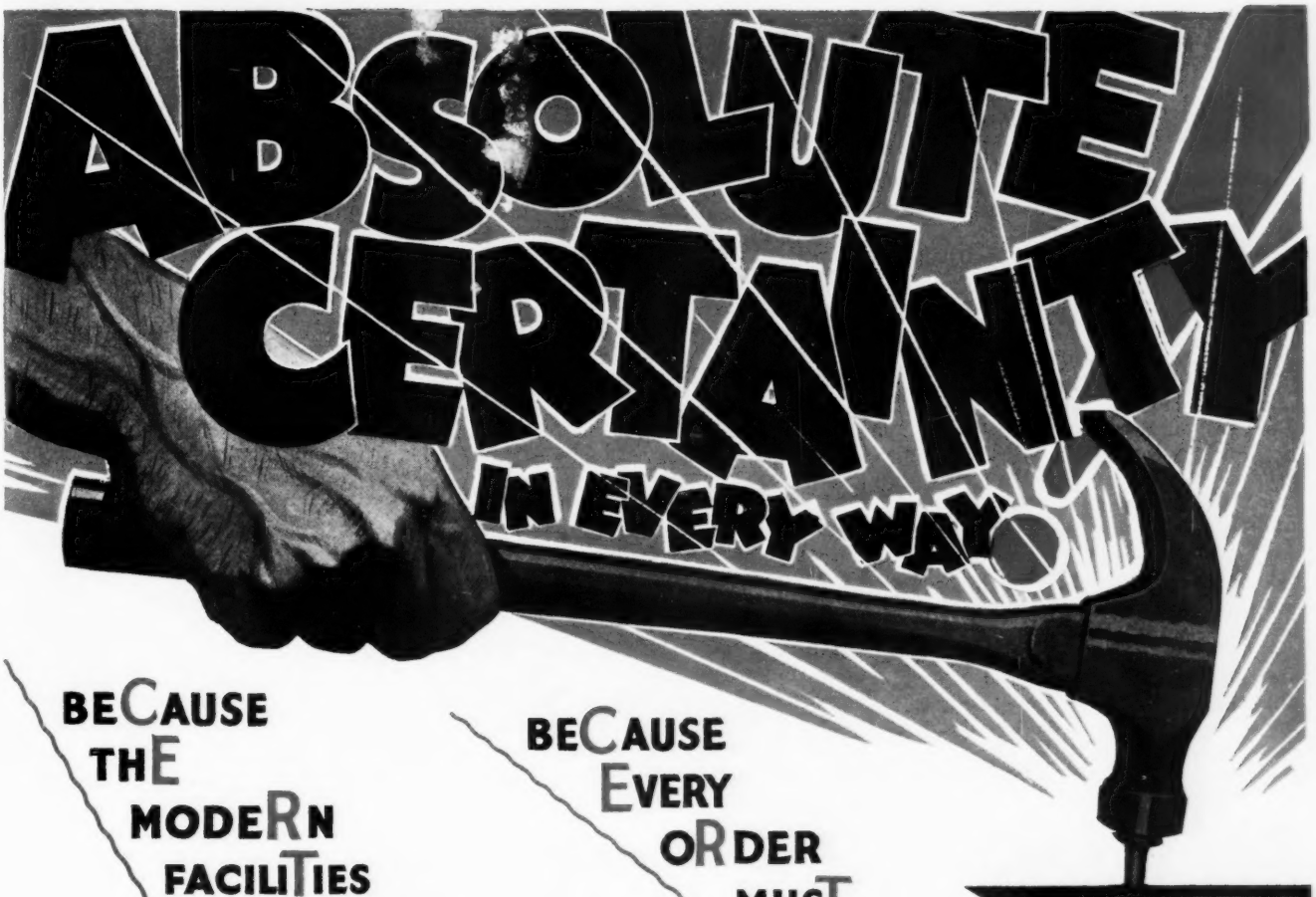
CLEVELAND, July 13.—The Wadhams Oil Co. has undertaken a radio advertising campaign over station WTMJ at Milwaukee. The company is giving radio listeners a complete account of Milwaukee baseball games both at home and abroad throughout the American Association season.

The advertising is built on the theory that radio appeal should be specific and not too general in its appeal. Two or three products are mentioned in each program, not the complete line.

To aid Wadhams dealers the announcer mentions four such in the intervals between play in each of the broadcasts. For example: "Harry Koepp is the big Wadhams gasoline merchant at Pewaukee, Wis. He operates stations at each end of the city on Highway 19 with a full line of Wadhams products in each."

NEW YORK, July 12.—Continental Can Co., Inc., here has purchased the Eastern Shore Can Co., Hurlock, Md., including its plant and some 10 acres of land. The latter company makes cans for vegetable canners principally.

ABSOLUTE CERTAINTY IN EVERY WAY



BECAUSE THE MODERN FACILITIES AVAILABLE INSURE UNIFORM SATISFYING QUALITY

ACCURATE TESTS INSURE THAT CERTAINTY IS OBTAINED THROUGHOUT REFINERY

BECAUSE EVERY ORDER MUST PASS RIGID INSPECTION AT REFINERY

CARS ARE READY TO ASSURE IMMEDIATE SHIPMENT TO EVERY POINT

The ELDORADO REFINING Co.

ESTABLISHED 1916

ELDORADO, KANSAS

JUST CALL L.D.11

Under-Surface Loading of Gasoline Cuts Down Evaporation Losses

By George A. Marsh, Jr.

IN the jobbing of gasoline overhead has been reduced, credits eliminated, and profitless accounts surrendered. However, there is still a source of waste and loss that many gasoline jobbers have done little or nothing to overcome. This is the loss of gasoline by evaporation, which can be controlled to a large extent by under-surface loading and handling.

To prove that this is worth while, take the case of a jobber who loses ten gallons of gasoline a day, and let us presume that the gasoline sells for 20 cents a gallon. His loss then amounts to $2 and if he has a favorable margin of 5 cents he has to take the profit from 40 gallons, each day, to pay for his loss. Without taking any handling charge into consideration, and using a relative wide margin of profit, the desirability of preventing this loss is apparent. It is self evident that with a narrower margin, the profit from a greater sale would be required to pay for the loss.

In order to thoroughly explain under-surface loading, let us see what causes evaporation. If you deliberately tried to evaporate a gallon of gasoline what would you do? You would place it in a shallow pan or in several pans. You would stir or agitate it and perhaps pour it from one pan to another. In other words, you would expose as much of it to the air as possible.

It follows then that the amount of evaporation is proportional to the amount of air that the gasoline is exposed to. Altitude, humidity, temperature, and the volatility of the gasoline being handled affect the rate of evaporation, but the AMOUNT of evaporation is determined by the amount of air with which the gasoline comes in contact.

Conversely, if gasoline does not come in contact with the air, no evaporation takes place. This is borne out by the fact that gasoline can be kept indefinitely in sealed containers, regardless of its specifications.

The jobber with several bulk tanks can effect a saving by confining his storage to the fewest number of tanks possible instead of keeping all his tanks partially filled. However, all

How Mr. Marsh Discovered Extent of Losses Resulting From Improper Loading

MR. MARSH the author of this article explains as follows how he discovered the losses that attend improper loading of tank cars and trucks.

"When I left the copper industry where I had done experimental and research work for several years, I accepted a position with The Continental Oil Company in a selling capacity.

"I was sent to the Pueblo division and the manager there commissioned me to go to Leadville to try and discover why their losses were abnormal. For years they had experienced unusual losses and had tried every means to discover where the leak was. Traps had been set to catch thieves and auditors had spent days watching every move but the loss continued.

"When I went out to the Leadville plant I noticed they used a funnel like arrangement in filling and was told that it was standard equipment at their plants. Now I had just completed some flotation experiments in which I had measured the amount of air entrained using different methods of discharging the pulp, and I noticed the similarity of their filling device to the most efficient means I had found to induce air.

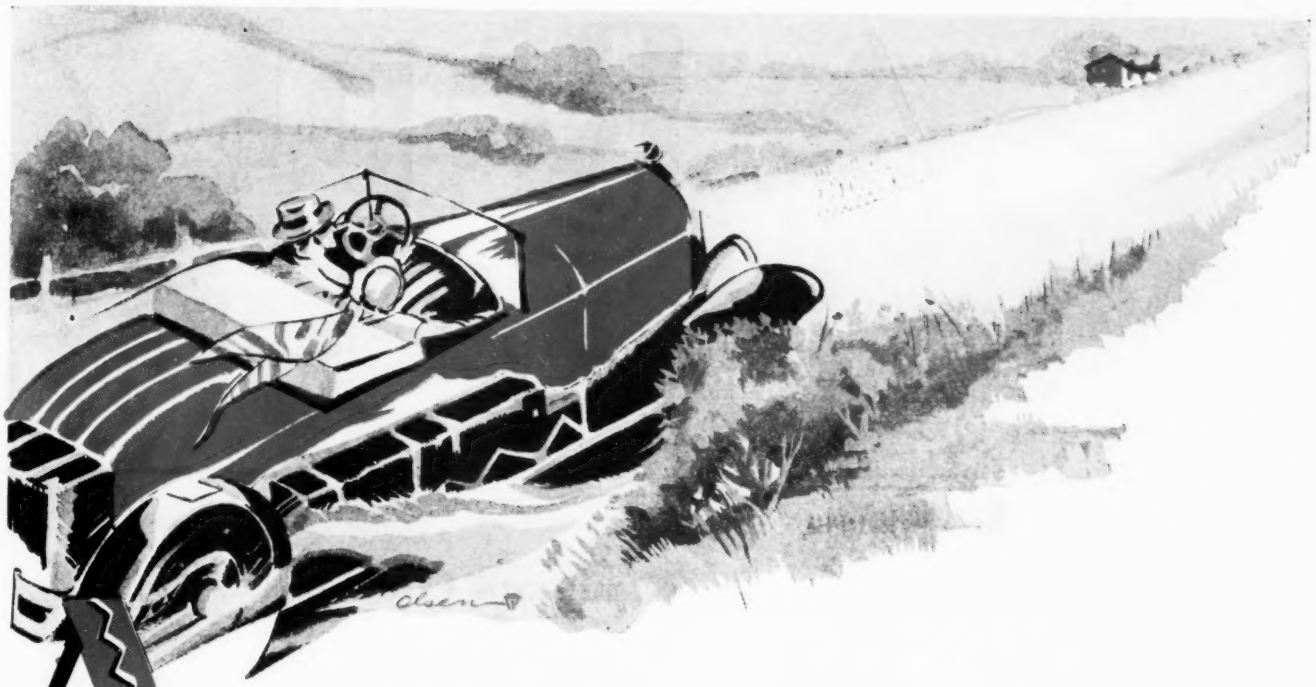
"I proved this by holding a piece of tissue paper above the loose slip-pipe and as the stream started the paper would be sucked into the pipe. The arrangement was virtually a carburetor, a device for mixing air with gasoline.

"The next thing was to find the amount of the loss caused by this method of loading. This was hard to do with the meager means at my disposal but at the end of ten days I had figures which checked so I returned to Pueblo and found that my figures checked the book loss pretty closely. I then made my report to the manager and recommended the use of the flexible hose in loading. After due deliberation and consideration he decided he would have to have proof of my statements before making any changes.

"In their yard at the Pueblo plant they have an old 50 gallon vertical boiler or tank equipped with a glass gauge rod and graduated in gallons. This is used for dispensing gas to their cars and trucks and has a regular flexible hose and nozzle similar to those in use at any service station. I secured a U. S. Standard 5 gallon measure and called the manager who came out with the chief clerk, the auditor, the yard foreman, and several others to watch the phenomena of gasoline evaporating.

"It was my purpose to show them the evils of bucketing, so I decided to draw off the gasoline in 5 gallon lots and purposely held the nozzle high above the bucket. Nothing of interest occurred until 25 gallons had been withdrawn, and then it was noticed that there was a discrepancy between the actual amount measured and the calibrated amount. We had overshot the 25 gallon mark nearly a gallon and the general consensus was that the calibrations were incorrect.

"Subsequent reading appeared incorrect and when we had bucketed 50 gallons thus there was a difference of 2 gallons. Now to prove my point and to save the foreman from the task of regauging the tank, I filled the tank to the 20 gallon mark and started to draw the gas off again, only this time I allowed the nozzle to discharge under the surface of the liquid. Every 5-gallon lot so withdrawn checked the tank calibrations exactly, which seemed to satisfy everybody concerned."



Are you *Getting the Two-Time Shot at the Tourist Trade?*

This is open season for tourists. The parade is on. Lots of them are stopping at your stations—*but how many of them will you get on the return trip?*

Will they avoid *you* because they got a slug of gum instead of a tank full of crystal white, volatile gasoline? Motorists are demanding gum-free gasoline—care-free motor fuel. Their motors are tuned up, they're away from home and mighty careful what they buy.

When you sell gasoline with a high gum content, you are really selling sticky valves, clogged carburetors, plugged gas screens, all of which mean sluggishness, loss of power, pick-up and acceleration. It doesn't take the motorist long to find it out and avoid you on his return trip.

PARCO ETHYL

—makes its debut to PARCO friends—a powerful combination—a truly marvelous motor fuel—backed by a clean cut merchandising plan and supported by comprehensive advertising.

Jobbers—It will pay you to inquire immediately for license details.

PARCO brings valuable repeat business because it is REAL, GUM-FREE GASOLINE. It is a highly cracked product with *guaranteed* crystal white color, sweet odor, controlled seasonal volatility, high anti-knock value.

Get PARCO'S specifications from our nearest sales agent. Compare it with any other gasoline. . . . . Then you'll know why *PARCO is the premium motor fuel without premium price.*

PRODUCERS AND REFINERS CORPORATION

Independence Denver Chicago Tulsa Salt Lake City Memphis Omaha

Seasonably volatile

PARCO

THE PREMIUM MOTOR FUEL WITHOUT PREMIUM PRICE

Our modern Refinery at Parco was built to advantageously supply Northwest jobbers. . . . Our Refining Facilities at West Tulsa and Blackwell mean advantageous freight rates for Southwest and Central States jobbers.

PARCO PETROLEUM PRODUCTS

A Reply to Warren C. Platt's E

PRODUCERS AND REFINERS CORPORATION

L. R. CRAWFORD,
PRESIDENT

INDEPENDENCE, KANSAS
July second, 1929.

Mr. Warren C. Platt,
National Petroleum News,
Cleveland, Ohio.

Dear Mr. Platt:

I was very much interested in the editorial on page 41 of your June 29th number, which commented on a letter you had received from a jobber who had sold his business.

I quite agree with all the arguments you advance, and believe there was never a more opportune time than the present for an independent jobber to succeed; that is, if he is content to increase his business in an orderly manner based on a fair return on his investment. If the jobber would at no time have more than one filling station or tank truck which was not paying its way, it seems to me that under the market conditions, which have prevailed over the last ten years, the hard working jobber must succeed, providing he is not too lenient in the extension of credit. This for the reason that it has been our experience, and I know it to be the experience of other refining companies, that the independent jobber can operate his stations more cheaply than the larger corporations. Furthermore, he takes a personal interest in the success of his business, far greater than it is possible to obtain through salaried employees. He is a home town man, usually on very friendly terms with all of his customers, and privileged to extend little favors that the salaried employee of the larger corporations hesitates to grant. On the other hand: if he attempts to pursue the methods of the larger corporations and puts in ten or twenty stations at one time, thus losing the personal touch with his trade, or else puts in ten thousand dollar stations on leased corners at rentals of two hundred dollars per month that control a gallonage of three thousand gallons per month, he will in all probability go out of business.

There may be hard times, of course, when the margins are small, but during these periods the margins of the integrated companies are just as small. Furthermore, their Station Sales Department may be called upon to help bear the loss of some other department, and often during periods when the Station Sales Department is enjoying a fair margin the Refinery Sales Department is moving gasoline in tank cars below cost, or the Production Department is drawing crude from storage at a loss. The only advantage that we can see which the large integrated company has over the independent is that they market an advertised product over their entire territory, thus enabling them to enjoy the touring business of the customer whom they have sold on their brand. The smart jobber, however, can overcome this disadvantage by lining up with a well known advertised brand of some refinery that does not compete with him, and a refiner who will sell only to high class ethical jobbers in other towns, thus permitting his customers to purchase

to Editorial

#2 - Mr. Warren C. Platt.

their favorite brand of gasoline as they make a tour of the country, returning to their home town thoroughly sold on the product and service they obtained, and also giving this jobber the business of the tourist who has been sold on this particular brand of gasoline and the service associated with it in some other town. The Producers & Refiners Corporation, extending no credit whatsoever beyond ten days, is naturally restricted to that class of prosperous jobbers just referred to.

Now as to the possibility of the independent jobber securing a permanent supply of gasoline at reasonable prices: With your knowledge of the line up in the Mid-Continent field, I am sure that you will agree that the Producers & Refiners Corporation has a very reasonable expectation of having a sufficient supply of crude oil for a long time to come. You will also agree, I am sure, that there will be no shortage of crude in the United States as a whole for an extended period of time. Present conditions, however, demonstrate the possibility of a shortage of crude in some given district, and each producing district has a certain marketing territory dependent on it for gasoline supplies, other producing districts making the price prohibitive. Assume for the moment a shortage of crude oil in the Mid-Continent field with an abundant supply of crude oil in California and plenty of crude oil to be secured by importation. The independent jobber located East of Chicago might secure plenty of reasonably priced gasoline from the Atlantic Seaboard, but the jobber West of Chicago, whose freight rates from the Atlantic Seaboard would be prohibitive, and who is competing with the integrated companies who still have a sufficient supply of Mid-Continent crude would be out of luck unless he enjoyed a connection with some Mid-Continent refinery, preferably one not competing with him in the Station Sales Department, who had a dependable source of crude oil. Conditions just illustrated naturally would make more desirable a refinery connection who was not dependent on open market purchases for a supply of crude oil.

The Producers & Refiners Corporation so thoroughly agrees with your editorial that it is our policy not to build or buy any more stations. The stations we now own or control are located largely in Tennessee, Wyoming, Idaho and Utah. We do not propose to buy or build stations in that great territory lying between Chicago and the Rocky Mountains. We are going to depend for our outlet on those far-sighted jobbers in this territory who we are sure will make a success of their business.

In conclusion, above all the successful jobber must line up with some refinery who can supply an anti-knock gasoline, which is not only entirely anti-knock, but a premium motor fuel in every respect, and Parco Ethyl Gasoline, backed by its clever and proven line of local advertising and the National Ethyl Advertising campaign is just that.

Yours very truly,

L. R. Crawford

LRC:brs

Now Offered to First Class Jobbers

PARCO

ETHYL

GASOLINE

Backed With a Powerful Business Pulling

ADVERTISING CAMPAIGN

Here is your big chance to forge ahead in the gasoline game. A chance to build a permanent and profitable business.

PARCO has always been a great name in the quality field of motor fuels. Now this supremely good gasoline has joined forces with ETHYL—the universally recognized anti-knock compound.

The result is the highest grade motor fuel for new day motors we know anything about. Delicately attuned high compression motors have made motorists mighty particular about the gasoline they use. They can't be fooled. They want the best.

Every batch of PARCO ETHYL Gasoline is tested and approved by the Ethyl Gasoline Corporation before it is shipped. The anti-knock quality is certified by the Ethyl Gasoline Corporation.

PARCO ETHYL Gasoline is not just a good U. S. Motor gasoline with anti-knock qualities. It is the best motor gasoline we know how to make regardless of yield or cost, with sufficient Ethyl Brand of anti-knock compound to make it a certified anti-knock motor fuel.

In an anti-knock gasoline, ninety-nine percent of perfection is very little better than twenty-nine—or even eight percent. It must be ONE HUNDRED PERCENT ANTI-KNOCK, for if it knocks the least bit the user is dissatisfied.

PRODUCERS AND REFINERS CORPORATION

Independence Denver Chicago Tulsa
Salt Lake City Memphis Omaha

traditions to the contrary, the gasoline loss by evaporation while in actual storage constitutes but a small percentage of the total loss in well constructed bulk tanks.

The great loss comes in handling, namely, the transfer from the bulk tank to the tank truck and from the tank truck to the dealer's tank or container. One accepted practice the country over is to insert a 2-inch pipe into the tank truck dome, or open-

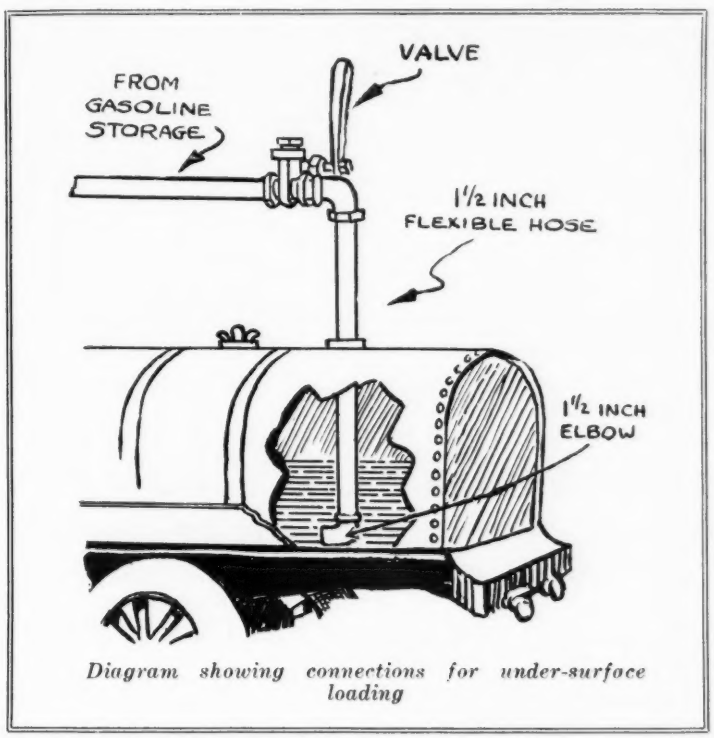


Diagram showing connections for under-surface loading

ing, open the swing valve and allow the gasoline to fall through the air to the bottom of the compartment. Not only does the falling stream entrain air which is liberated a second later, but the main body in the compartment is continuously being agitated and stirred by the falling gasoline until the compartment is filled.

It is the practice of some companies to employ the use of a funnel like arrangement in filling the tank truck. Either a funnel or a loose slip pipe is placed over the discharge pipe and empties into the compartment; the advantage of this method being that the different compartments of the truck can be filled without moving the truck.

Now it is a well known and established fact that a fast falling stream within a loose pipe will induce and entrain air. This principal is utilized in metallurgy where it is desirable to entrain air in pulp previous to flotation. Also, there is a suction filter on the market employing this principle and it is highly efficient.

Both methods described invite and cause a loss, and the second far more than the first. The first makes no effort to exclude air or decrease agitation, and the second not only does this, but forces additional air into the gasoline to form a gas vapor which must escape never to return.

One large jobber in the west and many smaller ones, use the loose slip-pipe entirely and it is considered standard equipment at their plants. Consequently they suffer enormous losses. One of their plants situated at an altitude of about 10,000 feet, experienced a loss of nine gallons in loading a 350-gallon tank truck. This figure was checked many times and occurred regularly with each loading of the truck. And again at a plant at about 5000 feet altitude where similar equipment was in use, a loss of six gallons took place in loading a 350 gallon tank truck. These losses may appear abnormal, but they are the usual thing where equipment is used that induces air into the falling stream. Altitude affects evaporation to such an extent that mention must be made of it in analyzing losses.

Two plants in the west located at about 4000 feet employing the first described method of loading have a loss of three gallons in loading 300-gallon trucks, or 1 per cent. This seems to be the usual figure at plants using the first method of loading although at higher altitudes a higher per cent of loss can be expected. Most jobbers accept this loss as a necessary evil and one peculiar to their line, yet this loss can be reduced by at least 70 per cent, or a little more than two gallons.

By using a flexible gasoline hose in

"All the way please"

NO five-gallon "installments" from coupon book holders. They want the tank full up.

Coupon books will bring you that class of trade. And once your customers try them, they've got the habit.

Coupon books increase any station's business. For people drive out of their way to go where their coupons serve as cash.

When hundreds of small companies and big companies alike—Sinclair, Texas, Standard, Associated Oil, for example—specify *Rand McNally* Coupon Books, you know there must be a reason why.

Coupon books by Rand McNally means better quality printing, guaranteed numbering, certified count, quicker deliveries. As well as the savings our huge production makes possible.

We carry special and stock designs for companies desiring to install the coupon book system.

Wire or write for prices in quantity.

RAND McNALLY & COMPANY
Dept. S-31
536 S. Clark Street
Chicago
270 Madison Avenue
New York
559 Mission Street
San Francisco

SPECIALISTS IN COUPON BOOK PRINTING

Compressed air equipment increases profits, because

Faster work attracts customers; cuts costs

Good work - quickly!

Through visibility, the Curtis Rotating Lift aids both thoroughness and speed ~ ~ ~

WHY go against human nature? Your customers want *speed*. The cramped working quarters of grease racks and pits make real speed impossible—real thoroughness, either.

* * *

The Curtis Rotating Lift cuts the time of a grease job in half! That satisfies the customer—also makes you more profit by cutting your cost in two! You do a better job because *you* can see. The customer can tell that it is a better job because *he* can see.

* * *

The Curtis Rotating Lift is the *safe* lift to work under. A positive, never-failing "oil lock" holds the Lift solid as Gibraltar in any position.

* * *

Flush stuffing box design; no pits; no recesses. Roll-on or free-wheel type.

* * *

A car dealer [name on request] says: "We find our washing, greasing, and oil changing business has been *doubled* since installing Curtis Rotating Lift and Car Washer."

* * *

Let us send reports of actual installations, with specific costs and savings. They show that the small investment is repaid *every few weeks!* Write today or use coupon.

Write for new Catalog C-75

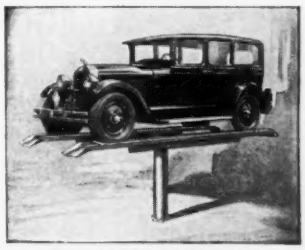
CURTIS

This company was founded in 1854; is, therefore, in its *seventy-fifth* year. Three quarters of a century of successful business existence can be explained only by [1] integrity, [2] sound policy, and [3] financial strength to permit the extensive development and research work necessary to keep our product in advance of competition.

The TIMKEN BEARING Compressor Line

1854 CURTIS 1929
75th Anniversary Line

Curtis Rotating Lift increases your profits because it [1] attracts customers. [2] cuts time-cost. Inspecting, lubricating and repairing done in half the time. Lets the customer see the work. This is the *safe* lift for you and for the car. Lift always held in position by positive **oil lock. Flush stuffing box design;** no pits or recesses. Roll-on or free wheel type.

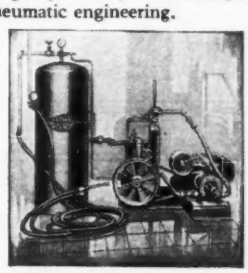


Curtis Rotating Lift

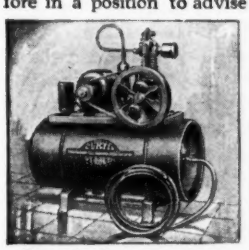
Curtis Hydraulic Car Washer

Curtis Hydraulic Car Washer—A low-priced self-contained outfit. One and two gun sizes. New slow speed **pump, fully enclosed and self-oiling,** specially designed by Curtis for car-wash service. Flooded and direct self-oiling systems. Special alloy-steel rust-resisting double-heat-treated nozzle discs. Automatic pressure governor. This car washer is the result of 75 years manufacturing experience, of which 32 years have been devoted to pneumatic engineering.

Curtis Compressed Air Washer not only washes more cars cleaner than any other power washer, but renders a *complete* cleaning service. Operates cleaning attachments and pneumatic tools, furnishes air for tire inflation, etc. New features are: **Timken** equipped Curtis **duplex compressor;** more compact mounting; reduced weight. Curtis is the only manufacturer building both types of washer, therefore in a position to advise without prejudice.

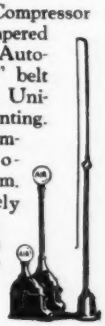


Curtis Compressed Air Washer



Curtis Compressor

Curtis Compressor has **Timken** tapered roller bearings. Automobile type "V" belt drive. All Sizes. Universal motor mounting. All-steel base. Improved "Centro-Ring" oiling system. Painted attractively in red and black. Curtis Air Stands —Reel and Tower types with or without water attachments.



St. Louis

Curtis Pneumatic Mchy. Co.,
1965 Kienlen Av., St. Louis—518-X Hudson Term., N. Y
Please send information about .....
.....
Name.....
Address.....

B3

loading, the faults of both methods are largely overcome and the advantages of neither are lost. Following the idea that it is the air that causes the loss, the hose should be inserted into the compartment or container to be filled, until the discharge end rests on the bottom of the compartment. With the other end of the hose tightly coupled to the discharge end of the gasoline line, the loading should start slowly until the discharge end of the hose is covered at least.

You will readily see that no air can be entrained when the hose is used in this way, as the entire discharge is under the surface of the gasoline itself. It is true that the entrance of the gasoline causes some agitation in the compartment, but it can not be compared to the agitation caused by the falling stream described in the first two methods.

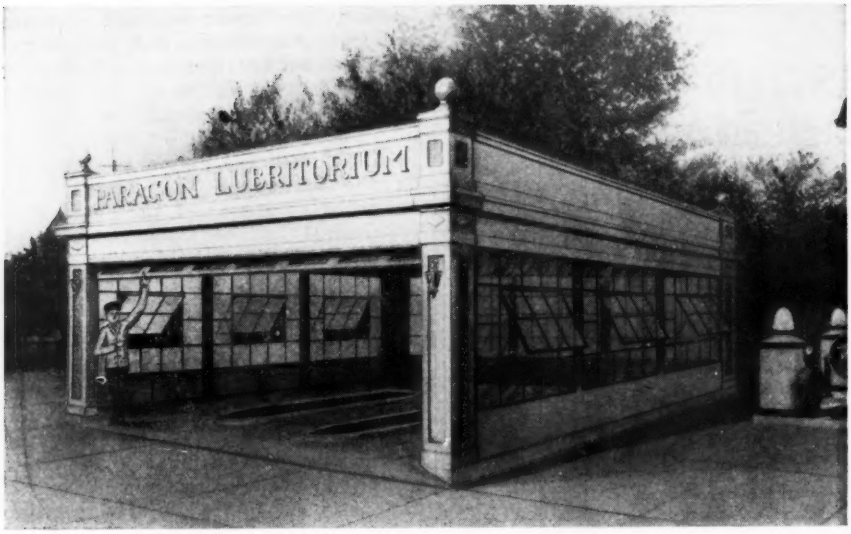
The amount of agitation can be controlled by the rate of flow; the faster the flow, the greater the amount of agitation. Unfortunately, it always seems necessary to load the truck in the least possible time, but the exclusion of the air alone makes this method the desirable one.

Its use has reduced losses 70 per cent by actual test over a long period of time. A 1½-inch flexible hose was used and no attempt was made to reduce the flow to decrease agitation, for the same reason that your own trucks are always loaded in a hurry.

IN ADOPTING this method a little difficulty will be experienced by the operator at first when he removes the hose from the tank. Practice will make perfect and after a few times he will prefer the hose because of its flexibility. To facilitate draining the hose it is well to equip the discharge end with an elbow, but loose enough to be turned with the hand. A brass or copper elbow should be used to reduce the danger of sparking as the hose is withdrawn.

All other connections should be tight, and only a hose in good condition should be used, else the air which you are trying to exclude will be induced into the stream. The elbow should rest on the bottom of the compartment too, in order to preserve the metal to metal contact, or grounding effect. The operator will find it easier to shut off the flow when the tank is nearly full and finish the loading above surface with the elbow resting at the side of the tank opening, always maintaining the metal to metal contact.

The same principles and the same care should be exercised in unloading the truck. The practice of bucketing entails a loss that can be entirely overcome as far as the jobber is concerned. The use of the unloading hose again does this. There are times of course when bucketing is a necessity, but to reduce losses it should



**GET YOUR GREASE PITS UNDER COVER—
BE UP-TO-DATE**

New Catalog Just Out Write For It

Grease trade of today is going to COVERED PITS. Get your grease outfits under cover for the coming winter, it is the latest improvement in GASOLINE and OIL FILLING STATIONS.

We manufacture the simplest to the most elaborate Stations. Can also put your own individuality in your Filling Stations—Let us help you work this out.

THE EDWARDS MANUFACTURING CO.
524-544 Eggleston Ave. Cincinnati, Ohio

Our Special—

58-60 S. R. Gasoline 400 e. p.
25-35% Benzol Equivalent
Passes all U. S. Motor specifications.

If you want a gasoline to compete with premium Anti-Knock products, order a trial car.

PETROLEUM OILS CORPORATION
Kansas City, Mo. Chicago Tulsa

only be done when occasion demands.

Figures on the losses caused by bucketing are startling. They have been checked and rechecked many times and are correct. The bail was hung on the discharge valve and the bucket filled in the usual way with the gasoline falling through the air to the bottom of the bucket. It was poured through a funnel then into a carefully and correctly graduated drum.

It was found that in every hundred gallons drawn from the truck there was a loss of 1½ gallons, and another loss of 1½ gallons between the bucket and drum. In other words, every time the jobber bucketed a hundred gallons of gasoline he took a loss of a gallon and a half, and the purchaser took a loss of the same amount, unknowingly, of course.

While these figures will vary in different parts of the country, they are significant in that they prove that a loss is entailed in bucketing that can be entirely wiped out by the use of the hose.

In filling drums or underground tanks under-surface loading will greatly reduce losses for the purchaser. A pipe long enough to reach the bottom of the container should be introduced into the opening of the drum or tank. Proper fittings can easily be secured to render an air tight connection to the unloading hose.

When the different truck compartments have been correctly gauged, using water as the medium, there can be no better measure for the jobber or the customer. The use of the unloading hose speeds deliveries and eliminates the jobber's loss entirely and if under-surface loading is utilized the customer's loss is reduced 70 per cent.

In summarizing, the main point to remember is that your major loss occurs in the handling, and that the amount of your loss is determined by the amount of air which you allow to come in contact with the gasoline. Under-surface loading will materially reduce the loss and facilitate the loading of the truck.

Builds Gas Plant

CLEVELAND, July 13.—The Windsor Gas Co., Windsor, Ont., will spend $1,000,000 this year building an auxiliary plant to manufacture gas from fuel oil to supplement the natural gas supply when pressure falls. Capacity of the plant will be 6,000,000 cubic feet per day. A 1,000,000 cubic foot gas holder will be built, doubling storage capacity.

COLUMBUS, July 12.—The fall convention of the Ohio Petroleum Marketers Association will be held on Sept. 18 and 19 at the Deshler-Wallick Hotel here, according to W. A. Milne, executive secretary.

Please The Eye First Says Marketer Whose Flowers Attract Customers

Centered among a profusion of flowers and shrubs, this unpretentious bulk station becomes attractive. It is in line with the Canfield Oil Co.'s program of station beautification to help gasoline and oil sales

By N. M. Mainpa
N. P. N. STAFF WRITER

DOVER, O.

PLAYING upon man's vanity by making friendly inquiries after his health or his job, is a potent weapon in the hands of an oil merchandiser operating service stations, in the opinion of H. G. Harper, manager of the Canal Dover, O. district of the Canfield Oil Co., Cleveland.

Mr. Harper's first instructions to dealers in his territory are to address the customers by name. If the dealer does not know a new patron's name, he must find it out. The next time he drives in, it must be "Good morning, Mr. Smith," or "Good evening Mrs. Brown."

"When the customer and attendant become more friendly from more frequent calls, the attendant greets him in less formal fashion, and calls him by his first name," Mr. Harper said. "Of course, we leave it to the discretion of the attendant as to whether a man will like that or not, but in a small town such as ours, people are necessarily more friendly and informal than in larger cities. Our customers seem to like it when we address them as if they were old friends of ours."

Mr. Harper operates the Canfield bulk station in Dover. All retail outlets are operated by dealers, the company itself having no service stations there.

"The attendant, in the course of serving the customer, finds out what kind of work the man does or what he is particularly interested in. He inquires about his work at the mill or about his golf, letting the customer know that he is interested in what he does.

"Or, if the driver is a lady, he inquires about the children he sees in the car, which naturally, makes a hit with the woman."

These little revelations of personal interest in the customer have proven of value in retaining many as permanent patrons, Mr. Harper said.

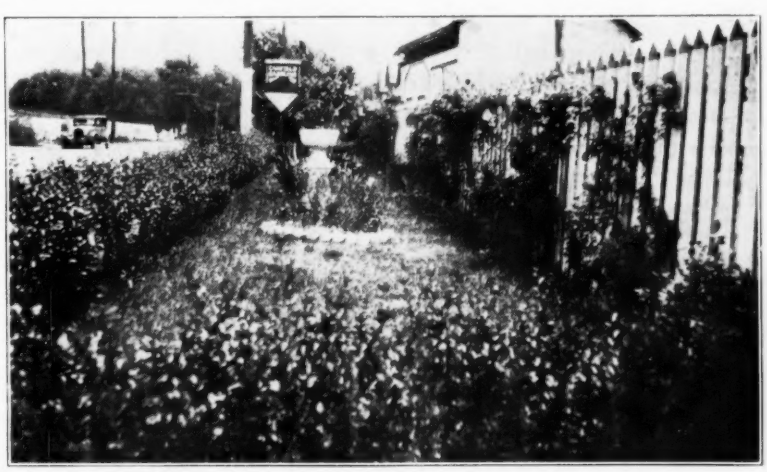
The universal love of flowers is another human weakness which Mr. Harper capitalizes. He has achieved fame not only for himself but for his company through his horticultural efforts, so that everyone in town knows that it's the Canfield plant at the edge of town that has all those flowers and shrubs.

Not merely a little garden or small semi-circular plot of flowers has given him this reputation, but eye-arresting, luxuriant masses of white, pink and crimson rambler roses that climb energetically over fence and trellis, large gardens of asters and larkspur, borders of hollyhock, snapdragon and fern, urns of pink and red geraniums and window boxes of petunias, pansies and ivy.

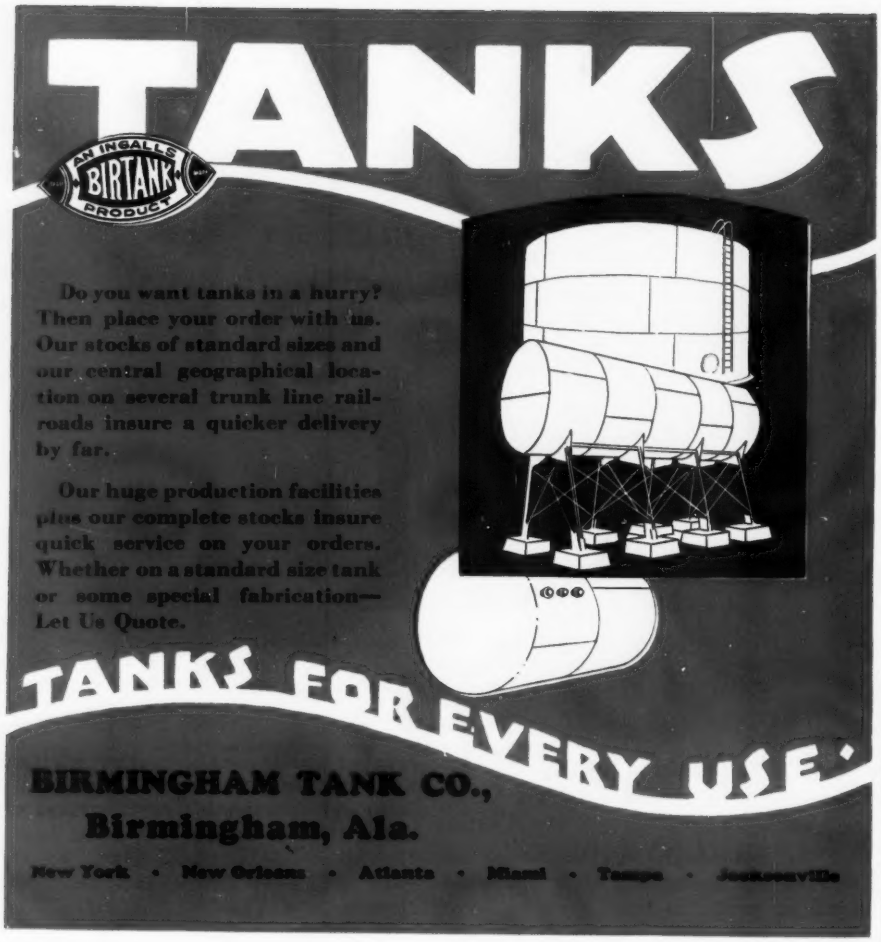
This bulk plant site has become one of the beauty spots and show places in Dover. Townspeople bring out-of-town friends to see it. They talk about it, come to Mr. Harper often for advice about planting and bring him "shoots" of various plants and flowers to try out. It is, in the opinion of Mr. Harper, one of the best advertising stunts in town for the company, as it sells itself and is advertised by word-of-mouth.

The gardens weren't started, however for this purpose alone.

"I am naturally a lover of flowers," Mr. Harper said. "I like to plant and tend them. All



A view of one of the gardens showing rambler roses and a privet hedge, a bed and urn of many different kinds of flowers


TANKS
AN INGALLS BIRTANK PRODUCT
Do you want tanks in a hurry? Then place your order with us. Our stocks of standard sizes and our central geographical location on several trunk line railroads insure a quicker delivery by far.
Our huge production facilities plus our complete stocks insure quick service on your orders. Whether on a standard size tank or some special fabrication—Let Us Quote.
TANKS FOR EVERY USE
BIRMINGHAM TANK CO.,
Birmingham, Ala.
New York · New Orleans · Atlanta · Miami · Tampa · Jacksonville

REDUCE YOUR DISTRIBUTING COSTS

HUNDREDS of concerns whose profits depend largely upon the economical distribution of their products, have standardized on Sterling trucks. Why not effect such savings in your business? *Descriptive literature is yours for the asking.*

Sterling
MOTOR TRUCKS

STERLING MOTOR TRUCK COMPANY
43rd Ave. & Rogers St.
Milwaukee - - Wisconsin

this work has been done in the evenings and in my spare time and no money has been spent on it. I did buy a few rose bushes when I first started the gardens three years ago, but the rest has been given me by friends here in town.

"I know that the appearance of my place is improved just 100 per cent by these floral decorations, so I am repaid for what extra work I put in on them."

ALTHOUGH this unusual beautification program is a voluntary achievement on Mr. Harper's part, it is going to assume the proportions of a campaign in the interests of better merchandising for the company. All stations of the company will be beautified with more landscaping, and frequent baths and more frequent applications of fresh paint will keep them clean and shining.

Working on the theory that there first must be an appeal to the eye before there can be a sale, the company will launch a campaign that will determine whether attractively-groomed service stations constitute a more effective sales-getter than newspaper space, for instance. Its former advertising appropriation will be spent on its stations this year, and very little, if any, advertising will be done.

"The eye carries away the surest and most lasting impression," J. G. Mrohaly, special representative in the North Ohio stations department, said.

"I wonder what proportion of motorists read your ads compared to those who see your stations?" he asked.

"In my opinion," he continued, "most people in this hurried day limit their newspaper reading to the headlines, to the front page, to the sport section, or to that part of the paper that most interests them. Unless the reader is particularly interested in looking at the ads, I do not believe that many of them see them at all."

Much already has been done by the Canfield company in landscaping and good housekeeping at its stations, as anyone patronizing them or noticing them can testify. Every little available nook or corner boasts its flower or shrub, if a larger garden is not possible for lack of space. There are usually flower boxes for the windows, too. Even the refinery in Cleveland has felt this aesthetic urge and flowers bloom in great profusion alongside gasoline and fuel oil loading tanks, as described in the Oct. 10, 1928 issue of NATIONAL PETROLEUM NEWS, page 63.

After the customer has once driven in, then it will be another problem to get him to return. Details of this

H. "Glen" Harper picking a bouquet of rambler roses for a customer at his bulk plant at Dover, O.

part of the campaign are now being worked out, Mr. Mrohaly said.

One thing upon which the men will be instructed, he said, is not to be too zealous or too fussy about the attention they give a car. Rather than "jumping at it" and confusing the motorist with too much attention, he will be courteously reminded about water for his radiator, about air for his tires, or about motor oil, he said.

"I know from my own experience," he said, "that too much windshield wiping and radiator filling is not appreciated. Not long ago an attendant, in his effort to wipe off my windshield, stepped on my fender and scratched it with his shoe every time his arm moved in the performance of this duty.

"And I have had attendants who spill water carelessly over the hood when filling the radiator.

"Our services will be complete, but we will endeavor to iron out and tone down all the rough edges in station service," he added.

The bulk plant at Dover has all the usual equipment found at such places—unloading tanks, drums, and other equipment.

The border of rambler roses on either side is so thick that it shuts from view much of the unsightliness of "back stage" scenery. The plant itself lays no claim to pretentiousness but its appearance is improved a great deal by the surrounding gardens.

To one side is a long stretch of evenly-cut privet hedge bordering the

1879 GOLDEN ANNIVERSARY YEAR 1929

before you buy

100% Pennsylvania Motor Oils

—read this

Sell a 100% Pennsylvania Motor Oil—YES—and build up your business with FREEDOM 100% Pennsylvania Motor Oils—made from 460-470 flash Bright Stock (Sharples process) and 100% Pennsylvania Crude high flash Neutrals.

The former is made in the Coraopolis plant, the latter in the Freedom plant, of The FREEDOM Oil Works Company—an organization celebrating its fiftieth year of specialization in the refining of 100% Pennsylvania Crude, its Golden Anniversary of fair dealing.

Deliveries can be made in tank cars, compartment tank cars, barrels, or drums. Write for quotations.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

460-470 flash, minimum 85 Visc., low cold test Bright Stock (Sharples process).

FREEDOM 100% Pennsylvania Crude high flash Neutrals.

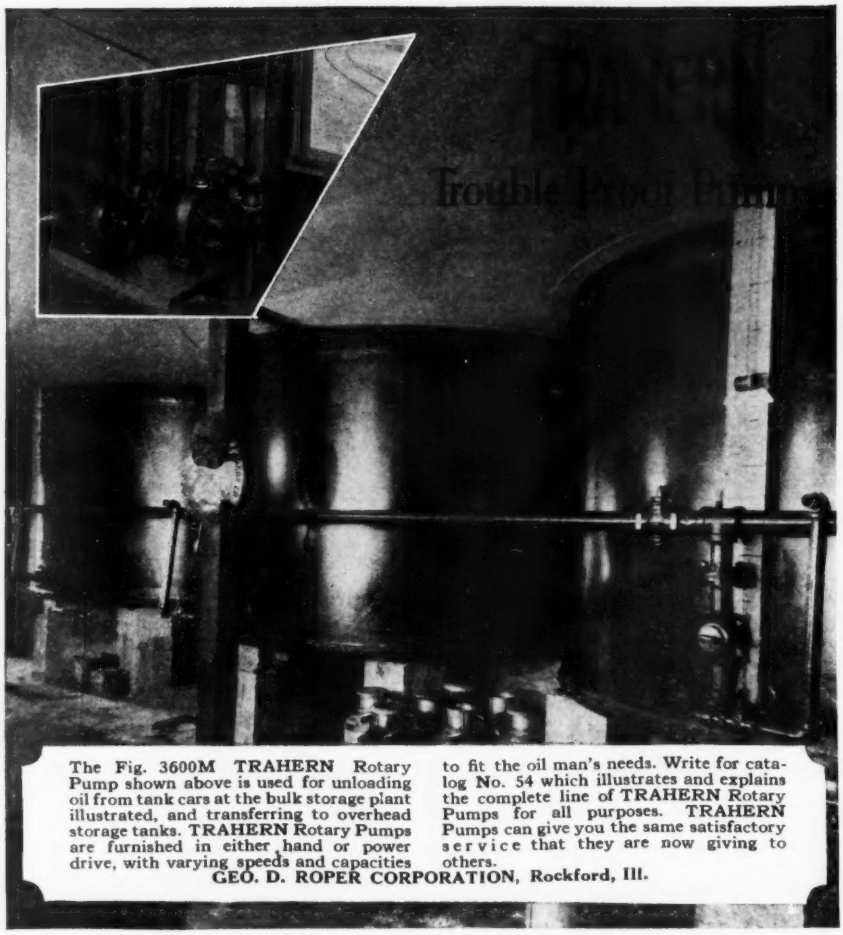
100% Pennsylvania Motor Oils, blended to your own specifications from FREEDOM 460-470 Bright Stock and FREEDOM 100% Pennsylvania Crude high flash Neutrals.

FREEDOM 600 Steam Refined.

FREEDOM filtered low end point Kerosene.

THE FREEDOM OIL WORKS COMPANY
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM



The Fig. 3600M TRAHERN Rotary Pump shown above is used for unloading oil from tank cars at the bulk storage plant illustrated, and transferring to overhead storage tanks. TRAHERN Rotary Pumps are furnished in either hand or power drive, with varying speeds and capacities to fit the oil man's needs. Write for catalog No. 54 which illustrates and explains the complete line of TRAHERN Rotary Pumps for all purposes. TRAHERN Pumps can give you the same satisfactory service that they are now giving to others.

GEO. D. ROPER CORPORATION, Rockford, Ill.

FOR 30 CENTS A DAY

the OILGRAM gives you accurate market information you couldn't gather yourself for less than

$30 A DAY

The OILGRAM'S staff at each of the four publication points—Tulsa, Chicago, Cleveland, New York—make *daily* personal calls, and use long distance phone and telegraph services freely in gathering the market information in each day's issue of the OILGRAM.

The OILGRAM brings you the gist of this expensive market check every day at a low cost—$25 a quarter, or $75 a year, payable in advance—less than 30 cents a day.

Keep yourself posted *daily* on prices and important market developments through the OILGRAM.

Send your order or wire your nearest mailing point, and the OILGRAM will be started to you immediately. Make check payable to The W. C. Platt Company or Platt's Oilgram.

TULSA—904 World Building
CLEVELAND—1213 West Third Street
CHICAGO—35 East Wacker Drive
NEW YORK—342 Madison Avenue

flower beds and turns of geraniums and other flowers. At the back of this stretch is the white fence over which the roses climb.

At the other side of the station is a trellis which Mr. Harper made himself. This is also covered with roses. In front of the trellis is a long, brick-edged garden of asters, recently planted. Hollyhocks and larkspur finish off the lot where the trellis ends. At the back of the trellis are several beds planted to various assortments of flowers.

A newly-planted bed of Van Fleet roses were heroically struggling through the "proving ground." That is a plot of ground reserved for experimentation. When the flower proves its willingness to grow to lusty size, it is taken up and transplanted elsewhere where it will not blush unseen.

But the gasoline fumes, how do they affect the growth of the flowers? I asked Mr. Harper.

"I do not have any trouble on that score," he said, as he pointed out the bed of Van Flecks in the center of which was a gasoline fill pipe for underground storage.

"Of course, I plant the hardier flowers, but roses grow well here. Roses are aristocratic, however," he said, "and won't grow among other flowers, but they don't seem to mind the gasoline."

A sunken garden at the side of the station behind the rose trellis is an idea that Mr. Harper is considering as a further attraction for his station. A natural drain into the canal that runs through this part of Ohio would make it a comparatively easy and inexpensive proposition. His plans are to line the sides of the pool with rocks and make a lily pond of it.

512 Pumps Counted On 184-Mile Road

CLEVELAND, July 12.—There were 251 gasoline and oil stations with 512 pumps on the 184 miles of the Midland Trail in West Virginia, according to a survey made in May by Howard S. Jarrett, state commissioner of weights and measures. There were nine stations with 21 pumps under construction in May and 21 stations with 29 pumps, mostly curb installations, were being abandoned.

Two years before a similar survey revealed only 324 pumps in Midland Trail which enters West Virginia from Kentucky near Kenova and leaves the state east of White Sulphur Springs. The highway passes through Charleston.

Average gasoline sales were found to be 31,895 gallons a day from the 251 stations. This was 127 gallons average per station or 62 gallons a pump a day.

In 1928 the stations sold 11,641,675

gallons of gasoline at an average of 23 cents a gallon. Gross receipts from gasoline amounted to $2,667,585.25 from which the state received $465,667 in taxes at 4 cents a gallon.

Only four of the 512 pumps were of the blind type. The others were visible or meter outlets.

The state sealer condemned 19 pumps due largely because they were damaged by spring floods. Most of these pumps, Mr. Jarrett told NATIONAL PETROLEUM NEWS, were located on low ground.

It was estimated that 10 per cent of the gasoline business in May was with cars registered in other states than West Virginia.

Columbian Forms Western Sales Subsidiary

Joe Conrin

KANSAS CITY, July 11.—Columbian Steel Tank Co. of Kansas City, has organized a subsidiary to handle sales of its products on the Pacific coast. The new company is the California Columbian Steel Tank Co., Ltd. Offices are at 617 Wright and Callendar Bldg., Los Angeles.

Joe Conrin has been made general manager of the California company and L. O. Davis will be in charge of installations and other field work. Mr. Conrin has been district representative for Columbian in Oklahoma and Texas. Mr. Davis is the engineer who was in charge of patterning the new A.P.I. bolted steel tanks made by the company.

Several train loads of the new A.P.I. tanks have been sent to warehouses of the new company. The western subsidiary also will handle metal buildings and partition mounted truck tanks.

ANY CAPACITY YOU NEED

For Filling Station or Super Service Station

Because we make only air compressors we are students of the requirements of stations of all sizes. Long ago we saw the coming demand for Air Compressors of larger capacity and prepared to meet it. Our range of capacities is a larger one. Anything from

1 CUBIC FOOT TO 52 CUBIC FEET

Is ready for prompt shipment. The service and long-lasting quality of Dayton Air Compressors is well known. Our all-purpose models are their own best advertisement, giving a service of uninterrupted character.

OUR "G" MODEL TWO STAGE COMPRESSORS

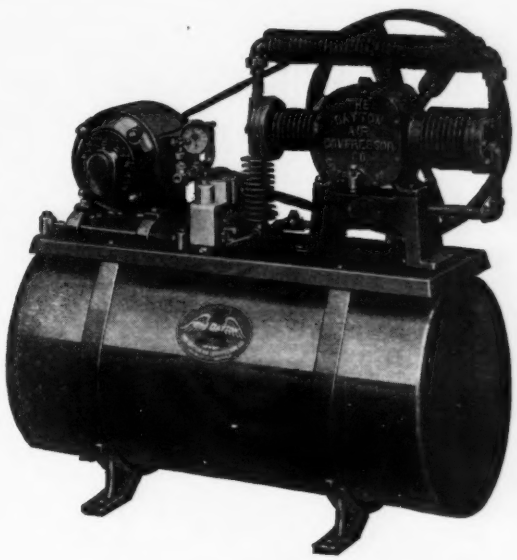
Are in a class by themselves. Seven sizes, and capacities from 2¼ to 10 cub. feet per minute. Ideal units for the average filling station.

THIS IS ONE OF THE "G" MODELS

Built without Connecting Rods— Crosshead Pins— Cotter Pins— Bolts—

Free from all ordinary troubles.

We would like to send you our catalog so you may make comparison with other types.



DAYTON AIR COMPRESSORS

425 Valley Street **Dayton, Ohio**

GASOLINE

All Grades and Tests

Penna · Mid-Continent · California

ANTI-KNOCK

WILLOCK OIL CORPORATION

First National Bank Building · Phone Atlantic 3110

PITTSBURGH, PA.

52 Years Experience · It Counts

YOU

want service— you'll get it with BENETCO drums

Because BENETCO drums are built to a high quality, they give you long, uninterrupted service... The drum that exactly fits your needs is in our line, and it is sold with the kind of factory service that makes for genuine good feeling between consumer and factory. Write for detailed descriptions.

WILSON & BENNETT Mfg. Co.

CHICAGO 6520 So. Menard Ave.

NEW YORK 39 Cortlandt St.

New Box Type Case

Completely equipped with bottles and jars . . . $15.75

269—A real oil sales case, covered with smooth black cowhide. Lined with red velvet. Case contains fourteen 4-ounce bottles and ten ½-ounce squat grease jars held in position by adjustable bars. Bottles are partitioned separately.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, Kansas City, Mo.

Lazy Bench

"WE WILL SHOW A PROFIT OF $5,000,000."
GOOD!
THE OIL EXECUTIVE WHO LISTENS TO A REPORT OF HUGE EARNINGS FOR HIS COMPANY WITHOUT BATTING AN EYE . . .
SHE LOOKS LIKE AT LEAST 7000 BARRELS, CHIEF!
YEAH
AND WATCHES A GUSHER DRILLED IN ON COMPANY PROPERTY, WITH NOT EVEN A SMILE . . .
WHOOPIE! A HOLE IN ONE YOWIE!
THEN GOES "HOG WILD" OVER SOMETHING LIKE THIS . . .

She'll Be On Time

He: "Then it is settled we are to elope at midnight?"

She: "Yes, darling!"

He: "And are you sure you can get your trunk packed in time?"

She: "Oh, yes, papa and mama have both promised to help me."

—Magnolia Oil News

* * *

All Straight

Doctor—Did that medicine straighten your husband out all right?

Wife—Yes, we buried him yesterday.

—Pure Oil News

* * *

Teacher (sternly): "This essay on 'Our Dog' is word for word the same as your brother's."

Small Boy: "Yes, sir; it's the same dog."

—Field Flashes

* * *

A little girl, attending an Episcopal Church for the first time, was amazed to see all kneel suddenly. She asked her mother what they were going to do. Her mother replied, "Hush, they're going to say their prayers."

"What, with all their clothes on?"

—The Booster

* * *

First Pedestrian: Well, what do you think of the new Ford?

Second Pedestrian: Couldn't say; I haven't been hit by one yet.

—Barnsdall

Now Ready for Service Stations,

Auto Dealers and Garages

Car-life REGISTERED Service

Simple, inexpensive and so appealing to car drivers that in actual operation it

DOUBLES THE SALES OF LUBRICANTS

We can refer you to Car-Life users who service 30 to 40 cars daily. These are not "transients"—but *regular customers* who return each 500 miles for lubricating service.

NO NEW EQUIPMENT TO BUY— USE ANY LUBRICANTS YOU WISH

Car-Life is merely a service plan, requiring only a few printed supplies. It carries no restrictions as to lubricants or equipment.

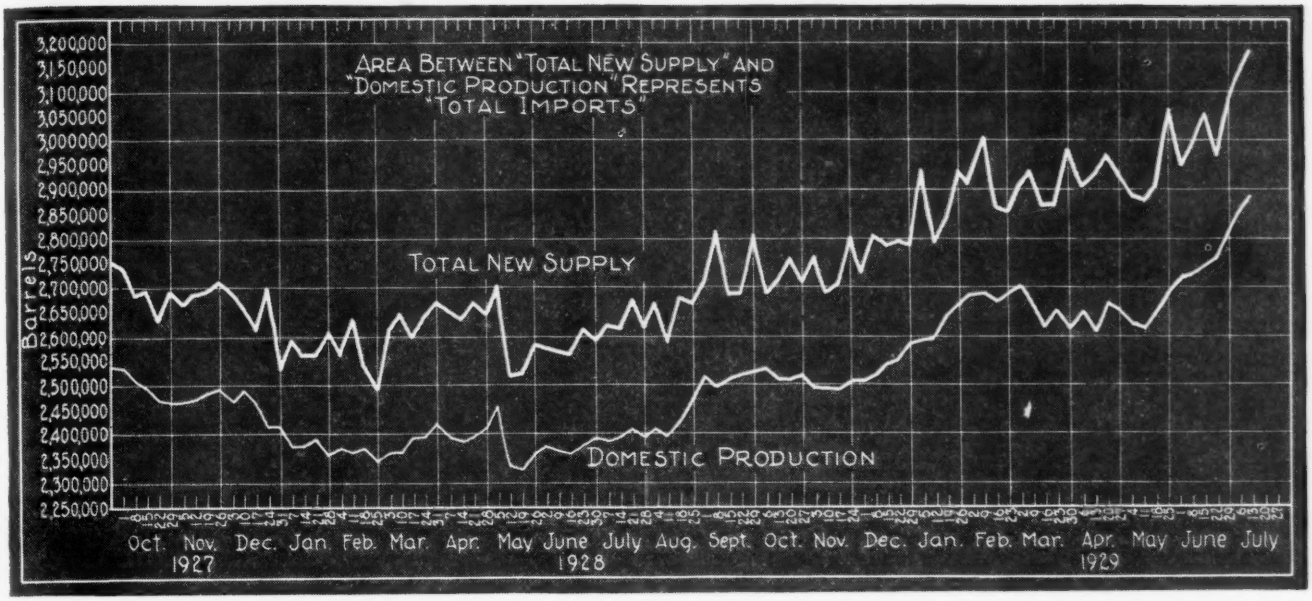
Car-Life Lubrication was perfected with the aid of some of the largest oil companies in America.

It is as adaptable to the small station or garage as to the largest "super" station.

Full particulars and proof free for the asking

COREY & McKENZIE CO.
Omaha, Nebr.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	July 13	July 6
Production east of Rockies	**2,009,150**	**1,978,800**
Increase		**30,350**
Total production in U. S.	**2,891,750**	**2,857,400**
Increase		**34,350**
Crude oil imports	**301,000**	**290,571**
Increase		**10,429**
Total crude supply	**3,192,750**	**3,147,971**
Increase		**44,779**

OKLAHOMA

	July 13	July 6
Allen Dome	24,950	25,000
Asher	9,750	.....
Blackwell	3,850	3,850
Bowlegs	33,600	34,650
Braman	3,800	3,800
Bristow-Slick	19,700	18,750
Burbank	19,700	19,700
Carr City	13,800	14,100
Cromwell	8,100	8,100
Cushing	18,550	18,550
Davenport	1,450	1,450
Duncan District	7,250	7,250
Earlsboro	82,650	80,700
East Seminole	5,250	5,350
Fox	1,400	1,400
Garber	5,750	5,800
Graham	4,200	4,250
Healdton	12,850	12,850
Hewitt	8,100	8,050
Hubbard	1,800	1,850
Little River	80,200	81,000
Logan County	21,000	19,300
Maud	11,900	12,250
Mission	33,850	34,850
North Okmulgee	12,800	12,800
Oklahoma City	19,700	17,250
Osage (outside Burbank)	26,500	26,550
Papoose	3,300	3,300
Pearson	1,250	1,250
St. Louis	75,150	79,350
Scholem-Alechem	12,700	12,750
Searight	11,850	*12,050
Seminole	34,400	34,200
South Okmulgee	8,350	8,350
Thomas	900	900
Tonkawa	9,850	9,950
Wewoka	4,750	4,750
Yale-Jennings	6,950	6,950
Others	59,000	64,550
Total, Oklahoma	720,900	717,800
Increase		3,100

KANSAS

	July 13	July 6
Augusta-Fox Bush	3,100	3,100
Churchill	5,900	6,100
El Dorado-Towanda	12,900	12,900
Florence-Covert	950	950
Greenwood County	21,150	21,300
Oxford	4,500	4,600
Peabody-Elbing	2,800	2,750
Rainbow Bend	1,050	1,050
Russell	3,200	3,300
Sedgwick County	33,250	34,350
Others	32,500	32,000
Total, Kansas	121,300	122,400
Decrease		1,100

NORTH LOUISIANA

	July 13	July 6
Bellevue	600	600
Caddo, light	9,500	8,350
Caddo, heavy	3,250	3,300
Cotton Valley	2,500	2,600
De Soto and Red River	3,450	3,800
Elm Grove	600	600
Haynesvile	5,000	5,200
Homer	3,900	3,900
Pleasant Hill	550	500
Urania	6,100	5,950
Others	250	250
Total, North Louisiana	35,700	35,050
Increase		650

ARKANSAS

	July 13	July 6
Champagnolle	7,400	7,700
El Dorado	4,550	4,600
Lisbon	1,200	1,250
Nevada	1,050	950
Smackover, light	6,200	6,050
Smackover, heavy	47,650	47,600
Stephens	1,000	1,000
Others	100	100
Total, Arkansas	69,150	69,250
Decrease		100

TEXAS (OUTSIDE GULF COAST)

Panhandle District

	July 13	July 6
Carson County	7,200	7,550
Gray County	55,750	52,950
Hutchinson County	25,150	25,750
Wheeler County	600	950
Others	1,100	1,200
Total, Panhandle Texas	89,800	88,400
Increase		1,400

North Texas

	July 13	July 6
Archer County	18,350	18,150
Burkburnett	8,800	8,950
Electra	12,000	12,200
Iowa Park and K.M.A.	4,800	4,900
Montague-Cooke	12,600	12,750
Wilbarger	26,100	26,200
Others	700	700
Total, North Texas	83,350	83,850
Decrease		500

West Central Texas

	July 13	July 6
Brown County	7,800	7,700
Callahan County	4,300	4,450
Coleman County	4,350	4,200
Eastland-Desdemona	6,800	6,700
Jack County	3,000	2,950
Palo Pinto County	300	350
Shackleford County	11,600	11,700
Stephens County	6,100	6,200
Throckmorton County	700	700
Young County	8,950	6,900
Others	600	600
Total, West Central Texas	54,500	52,450
Increase		2,050

West Texas

	July 13	July 6
Crane and Upton Counties	45,400	46,700
Crockett County	1,900	1,950
Howard County	42,900	43,350
Jones County	3,100	3,200
Mitchell and Scurry Counties	2,700	2,800
Pecos County	135,400	117,500
Reagan County	17,900	18,100
Winkler County	141,500	140,300
Others	1,500	1,550
Total, West Texas	392,300	375,450
Increase		16,850

East Central Texas

	July 13	July 6
Boggy Creek	2,600	2,950
Corsicana-Powell	7,550	7,600
Currie	350	350
Mexia	5,450	5,500
Nigger Creek	400	400
Richland	400	400
Wortham	1,000	1,000
Total, East Central Texas	17,750	18,200
Decrease		450

Southwest Texas

	July 13	July 6
Dale	400	400
Laredo District	10,950	10,800
Luling	11,400	12,150
Lytton Springs	900	900
Salt Flat	48,500	47,900
Somerset	1,600	1,750
Others	3,750	3,850
Total, Southwest Texas	77,500	77,750
Decrease		250
Total, Texas (Outside Gulf Coast)	715,200	696,100
Increase		19,100

GULF COAST

Coastal Texas

	July 13	July 6
Barbers Hill	8,500	8,700
Batson	1,250	1,350
Big Creek	4,500	4,250
Blue Ridge	3,400	3,700
Boling	1,500	1,500
Damon Mound	600	600
Goose Creek	5,600	5,600
Hull	7,800	8,150
Humble	6,300	5,600
Orange County	2,800	2,900
Pierce Junction	19,200	18,000
Raccoon Bend	6,600	6,500
Saratoga	900	850
Somerville	2,700	2,550
Sour Lake	2,800	2,700
South Liberty	6,100	5,350
Spindletop	29,300	27,050
Sugarland	12,700	13,100
West Columbia	6,100	6,250
Others	3,200	3,400
Total, Coastal Texas	131,850	128,100
Increase		3,750

Coastal Louisiana

	July 13	July 6
East Hackberry	3,150	2,950
Edgerly	700	700
Evangeline	2,500	2,900
Lockport	3,600	3,500
Old Hackberry	2,350	2,100
Sorrento Dome	200	200
Sulphur Dome	1,700	1,700
Sweet Lake	100	200
Vinton	4,200	4,200
Others	800	700
Total, Coastal Louisiana	19,300	19,150
Increase		150
TOTAL GULF COAST	151,150	147,250
Increase		3,900

ROCKY MOUNTAIN

Wyoming

	July 13	July 6
Big Muddy	2,300	2,250
Elk Basin	650	750
Grass Creek	2,100	2,250
Labarge	1,750	2,100
Lance Creek	200	200
Lost Soldier	3,900	4,150
Oregon Basin	5,600	4,300
Rock Creek	2,400	2,400
Salt Creek	31,050	29,000
Others	3,750	3,650
Total, Wyoming	53,700	51,050
Increase		2,650

Montana

	July 13	July 6
Cat Creek	1,450	1,450
Pondera	3,200	3,200
Sunburst	6,850	6,850
Others	100	100
Total, Montana	11,600	11,600

Colorado

	July 13	July 6
Florence	850	1,050
Fort Collins	2,150	2,200
Moffat (Craig)	1,450	1,550
Others	2,350	2,500
Total, Colorado	6,800	7,300
Decrease		500

New Mexico

	July 13	July 6
Artesia	800	800
Hogback	100	150
Rattlesnake	1,400	500
Others	450	450
Total, New Mexico	2,750	1,900
Increase		850
Total, Rocky Mountain	74,850	71,850
Increase		3,000

CALIFORNIA

	July 13	July 6
Dominguez	9,800	10,000
Elwood-Goleta	28,300	28,900
Huntington Beach	45,000	45,000
Inglewood	23,000	23,500
Kettleman Hills	3,400	3,400
Long Beach	173,000	178,000
Midway-Sunset	66,000	66,000
Rosecrans	6,000	6,300
Santa Fe Springs	280,000	268,000
Seal Beach	49,000	50,000
Torrance	13,000	13,000
Ventura Avenue	59,000	59,000
Others	127,100	127,500
Total, California	882,600	878,600
Increase		4,000

EASTERN

	July 13	July 6
(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	120,900	*119,100
Increase		1,800

*Revised.

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended July 12 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended July 12
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	61,165 — 10.5	113,248 + 1.4	62,790 — 7.7	54,579 + 10.5	63,762 + 8.8	355,544 — 0.2
Da. Av. Other Oils	7,604 + 19.9	2,374 — 60.4	2,815 +135.5	5,707 +188.8	2,828 + 24.7	21,328 + 20.0
GASOLINE—Gallons						
Stocks, July 5	30,161,000	73,505,000	17,509,000	8,384,000	12,943,000	142,502,000
Prod. 7-5 to 7-12	10,265,000 — 4.7	18,012,000 — 0.3	8,190,000 — 5.9	4,810,000 + 32.5	6,272,000 + 9.8	47,549,000 + 1.4
Ship. 7-5 to 7-12	12,868,000 + 6.8	20,064,000 + 4.1	7,870,000 — 5.3	5,510,000 + 13.7	6,079,000 + 13.5	52,391,000 + 5.7
Stocks, July 12	27,558,000 — 8.6	71,453,000 — 2.8	17,829,000 + 1.8	7,684,000 — 8.3	13,136,000 + 1.5	137,660,000 — 3.4
Ratio Sales to Prod.	125.4%	111.4%	96.1%	114.5%	96.9%	110.2%
KEROSENE—Gallons						
Stocks, July 5	8,969,000	6,504,000	2,422,000	16,000	1,193,000	19,104,000
Prod. 7-5 to 7-12	1,520,000 — 30.9	2,235,000 + 6.3	1,771,000 + 6.2	38,000 +216.7	392,000 + 69.0	5,956,000 — 4.1
Ship. 7-5 to 7-12	1,557,000 — 16.2	2,423,000 + 16.0	1,845,000 — 7.9	22,000 +120.0	630,000 +186.3	6,477,000 + 8.3
Stocks, July 12	8,932,000 — 0.4	6,316,000 — 2.9	2,348,000 — 3.1	32,000 +100.0	955,000 — 20.0	18,583,000 — 2.7
Ratio Sales to Prod.	102.4%	108.4%	104.2%	57.9%	160.7%	108.7%
STOVE DISTILLATE—Gallons						
Stocks, July 5	2,303,000	4,592,000	650,000	220,000	99,000	*7,864,000
Prod. 7-5 to 7-12	378,000 + 83.5	846,000 + 32.4	173,000 + 6.1	9,000—1022.2	72,000 — 34.0	1,478,000 + 21.3
Ship. 7-5 to 7-12	294,000 +196.9	75,000 — 65.9	162,000 + 60.3	109,000 +166.0	141,000 + 65.9	786,000 + 44.0
Stocks, July 12	2,387,000 + 3.6	5,363,000 + 16.8	661,000 + 1.7	115,000 — 47.7	30,000 — 69.7	8,556,000 + 24.7
Ratio Sales to Prod.	77.7%	8.9%	93.6%	126.7%	195.8%	53.2%
GAS OIL—Gallons						
Stocks, July 5	10,199,000	28,522,000	3,884,000	14,844,000	7,567,000	65,016,000
Prod. 7-5 to 7-12	1,536,000 — 11.0	780,000 — 66.1	977,000 — 39.1	467,000 — 19.8	1,994,000 + 11.1	5,754,000 — 28.1
Ship. 7-5 to 7-12	1,454,000 +130.1	53,000 — 81.0	1,235,000 — 27.4	1,959,000 +527.8	2,390,000 + 30.1	7,091,000 — 2.4
Stocks, July 12	10,281,000 + 0.8	29,249,000 + 2.5	3,626,000 — 6.6	13,352,000 — 10.1	7,171,000 — 5.2	63,679,000 — 2.1
Ratio Sales to Prod.	94.7%	6.8%	126.4%	419.4%	119.8%	123.2%
FUEL OIL—Gallons						
Stocks, July 5	15,992,000	60,383,000	49,577,000	34,318,000	28,868,000	189,138,000
Prod. 7-5 to 7-12	5,681,000 — 12.0	7,160,000 + 2.1	7,039,000 — 7.9	8,817,000 + 12.2	8,862,000 + 12.9	37,559,000 + 2.0
Ship. 7-5 to 7-12	7,127,000 + 28.5	7,071,000 — 4.6	4,051,000 — 61.9	9,327,000 + 20.1	9,632,000 + 26.9	37,208,000 — 4.5
Stocks, July 12	14,546,000 — 9.0	60,472,000 + 0.1	52,565,000 + 6.0	33,808,000 — 1.5	28,098,000 — 2.7	189,489,000 + 0.2
Ratio Sales to Prod.	125.5%	98.8%	57.6%	105.8%	108.7%	99.1%

Gasoline Produced by Various Methods, Week Ended July 12

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,492,000	63.2	11,431,000	63.5	5,812,000	70.9	4,235,000	88.0	2,214,000	35.3	30,184,000	63.5
Cracked	3,339,000	32.5	5,321,000	29.5	1,820,000	22.2	390,000	8.1	3,401,000	54.2	14,271,000	30.0
Natural	434,000	4.3	1,260,000	7.0	558,000	6.9	185,000	3.9	657,000	10.5	3,094,000	6.5
Total	10,265,000		18,012,000		8,190,000		4,810,000		6,272,000		47,549,000	

+ or — columns are % change over previous week.

***Revised due to transfer of stocks.**

Gasoline Shipments Increase; Stocks Reduced

Staff Special—By Telegraph
TULSA, July 16

GASOLINE shipments from the 93 Mid-Continent refineries that report their operating statistics weekly to NATIONAL PETROLEUM NEWS, rose to 52,391,000 gallons in the week ended July 12.

The total shipments were almost 2,000,000 gallons of the record shipments for one week this year. The record was 54,507,000 gallons in the week ended May 31. Last week was the fourth week this year shipments have exceeded 50,000,000 gallons from the 93 refineries.

The record shipments in the week ended May 31 were the result of crude oil and gasoline tank wagon price advances. Buying then was heavy in anticipation of higher refinery prices. Since then buying has been less than the expectations of refinery sales managers.

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended July 12. Change in stocks figured from June 14.

GASOLINE

	Gallons
Production	189,432,000
Shipments	190,832,000
Net change in stocks	—1,400,000
Ratio sales to production	100.7%

KEROSENE

Production	25,330,000
Shipments	23,812,000
Net change in stocks	+1,518,000
Ratio sales to production	94.0%

STOVE DISTILLATE

Production	4,837,000
Shipments	2,132,000
Net change in stocks	+2,705,000
Ratio sales to production	44.1%

GAS OIL

Production	31,011,000
Shipments	33,596,000
Net change in stocks	—2,585,000
Ratio sales to production	108.3%

FUEL OIL

Production	152,324,000
Shipments	148,935,000
Net change in stocks	+3,389,000
Ratio sales to production	97.8%

Mid-Continent refiners generally reduced prices drastically last week in the hope that buying would be stimulated. The reductions apparently had some immediate effect as the increased shipments indicate. Shipments were approximately 2,800,000 gallons more than in the preceding week.

Each district with the exception of North Texas had a better gasoline demand. West Texas and Louisiana-Arkansas showed the greatest percentage of increase.

Crude runs were 700 barrels daily average less while charges of other oils were 3500 barrels daily average more. Crude charges were reduced 7200 barrels daily average in Kansas, increased 1500 barrels daily in Oklahoma, and reduced 5200 barrels daily in North Texas. West Texas refiners increased runs 5100 barrels daily and Arkansas-Louisiana refiners increased charges 5100 barrels daily.

Gasoline production was increased for the field as a whole 600,000 gallons. All of the increase was in West Texas and Louisiana-Arkansas. With the slight increase in production and the substantial increase in shipments gasoline stocks were reduced 4,800.000 gallons. Kansas, Oklahoma and West Texas reduced stocks, and North Texas and Louisiana-Arkansas added to stocks.

Kerosene production was reduced 4.1 per cent while shipments increased 8.3 per cent or approximately 500.-000 gallons. Stocks were reduced 500,000 gallons. Shipments were larger in Oklahoma, West Texas and Louisiana-Arkansas but lower in Kansas and North Texas.

Gas oil stocks were reduced 1,300,-000 gallons with the heaviest reductions in North and West Texas and Louisiana-Arkansas. Production was lower by 28.1 per cent.

Fuel oil stocks were increased slightly with both production and shipments almost on a balance. Kansas shipments increased 28.5 per cent but Oklahoma shipments were off 4.6 per cent. North Texas shipments were 61.9 per cent lower while West Texas shipments were up 20.1 per cent and Arkansas-Louisiana shipments 26.9 per cent.

O. L. Cordell Resigns

TULSA, July 16.—O. L. Cordell, for the past two years vice president in charge of retail marketing for the Independent Oil & Gas Co. here, has resigned.

Mr. Cordell has not announced his future plans. He was with the Waite Phillips Co. prior to its purchase by the Barnsdall Corp. He later joined the Phillips Petroleum Co., resigning to accept the position with the Independent company shortly after Waite Phillips became chairman of the board of that company.

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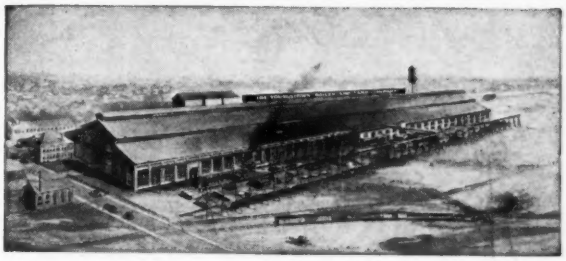

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Group 3 Refiners Reduce Gasoline To Meet Outside Competition

Staff Special
TULSA, July 13

REDUCTIONS of approximately 0.75 cent a gallon were made in gasoline prices in the Mid-Continent the week of July 8 to 13. Competition from virtually every refining district outside the Oklahoma-Kansas area was responsible in a measure for the reduction.

Jobber buying was stimulated only to a small degree by the reduction. The price recession in the Oklahoma market was reflected in some of the competitive areas, where prices also were reduced.

Natural gasolines were not in active demand and some distress goods were reported in some districts. Prices swung downward 0.25 to 0.75 cent a gallon.

Kerosenes, distillates and gas oils were in only slight demand. Kerosenes prices were reduced 0.25 cent in some quarters.

Fuel oils were more active at generally unchanged price ranges while neutral oils and cylinder stocks were in steady demand.

Gasolines

Mid-Continent refiners soon after July 1 became thoroughly convinced that if they wanted to get their share of gasoline business in their normal marketing territories this summer they would have to lower prices more in line with those from competitive areas. The lack of jobber buying after the July 4 holiday apparently furnished the final proof.

The market in the Mid-Continent normally gets some impetus just before or just after July 4, but jobbers showed only mild interest this year. Three or four weeks ago it was apparent among the trade that the refiners had fastened their hopes on the July 4 business. A few sales managers had intimated that if buying did not increase around that time something would have to be done to relieve the situation. The buying did not increase in spite of the apparently heavy consumption of gasoline for the country as a whole.

Gasoline prices accordingly were reduced 0.25 to 0.75 cent a gallon by a majority of refiners July 8. Two or three refiners in Oklahoma reduced quotations for 58-60 U. S. Motor from 9.25 cents to 8.50 cents. Others reduced prices from 9.25 to 9 cents a gallon, but before the end of the week virtually all the major refiners had reduced quotations to 8.50 cents.

A few of the smaller plants who had been selling around 8.50 to 9 cents lowered their prices to 8 to 8.25 cents, but the bulk of the gasoline at the 8-cent level did not meet U. S. Motor specifications, while at least a part of the 8.25 cent gasoline, while meeting specifications was off color and accordingly could not be shipped into some parts of the territory.

The drastic reductions in Oklahoma were followed by reductions of 0.50 cent in Louisiana and Arkansas. North and West Texas refiners had been close to the 8 to 8.50-cent level for several days and only minor changes were made in quotations in those districts. Kansas refiners reduced their Group 3 quotations in line with Oklahoma prices.

Some new buying was developed as a result of the reductions, but even then the demand was not as good as many refiners had expected. The reduction weakened the market structure decidedly in the Mid-Continent and apparently had a depressing effect even in refining centers outside the Mid-Continent which had been furnishing the stiffest competition.

Rumors were thick at the close of business July 13 to the effect that exceptionally low prices, in some instances as low as 7.50 cents a gallon, were being quoted f.o.b. Group 3. These low price quotations, however had not been verified July 13 and the majority of the trade in the Mid-Continent looked upon them merely as rumors started with the hope that they would have some effect in forcing prices further downward.

Oklahoma refiners particularly had realized for some time that competition was exceptionally strong for spot business. They accordingly had been content to take what business came to them on the spot market, and to ship the bulk of their goods on contracts. Their contract movement had been comparatively good.

Their high level of crude runs with resultant large production of gasoline, however, caused several of them to accumulate stocks in excess of their desires and they apparently decided the plan of reducing prices in the hope of stimulating business, was more advantageous than to go into the winter months with excessive stocks.

Refiners in the Mid-Continent continued to watch with much interest the Petroleum Export Association activities. The lack of export business this spring and summer has been keenly felt in virtually every district of the Mid-Continent.

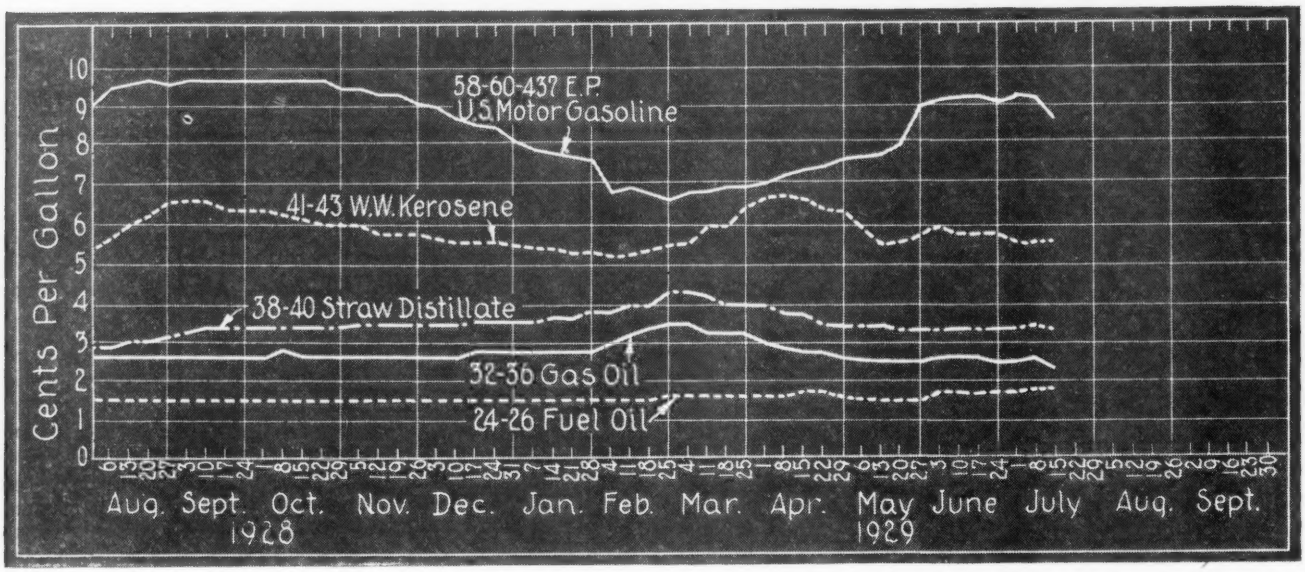
The reduction in gasoline prices was expected in some quarters to be the forerunner of a reduction in tank wagon and service station prices. Other persons were of the opinion there would be no change in the middle of the heaviest consuming period especially since the margin of profit even at the new refinery price levels was not considered any too advantageous for the jobbers.

Natural Gasolines

A rapid fall in natural gasoline prices was experienced. Price of grade AA fell from around 7.25 cents July 6 to 6.50 cents July 13. Grades BB and C also lost considerable ground. Heavy production with only moderate demand from refiners was reported responsible for a part of the weakness in the market.

Reports from the eastern field indicated manufacturers were badly in need of orders. One manufacturer in Tulsa July 12 received a wire stating encroachment of California gasoline had cut down natural gasoline consumption by refiners in the east and manufacturers had considerable goods and no orders.

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1928
1929

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Some off specification gasoline was offered late in the week at 0.25 to 0.50-cent under the going market for doctor and corrosion test goods.

Kerosenes, Distillates, Gas Oil

Kerosene demand was light all week. One or two major refiners who had been quoting up to 6 cents for 41-43 water white grade reduced prices to 5.75 cents. Other refiners moved their goods at a price range of 5.50 to 5.625 cents. Some untreated kerosene was moved at even lower prices.

Reductions also were made in other districts, the new prices ranging approximately 0.25-cent under the levels of a week ago.

Distillates and gas oil were in as good a demand as could be expected at this season. No material changes in prices were noted.

Fuel Oils

A more active demand for fuel oils was reported in several quarters. Some of the demand was centered around the higher gravities. A few refiners announced slight increase in prices, but they were still within the general range.

Neutral oils and cylinder stocks showed no change either in price or demand. Wax was also unchanged.

Steel Meeting Papers Interest Refiners

CLEVELAND, July 13.—A number of papers which will interest refiners are to be presented at the meeting of the iron and steel division of the American Society of Mechanical Engineers to be held at Cleveland in the week of Sept. 9.

Elmer A. Sperry, president of the society, will present a paper on nondestructive tests of welds and George A. Orrok, consulting engineer, will have a paper on foreign practice in welding boiler tubes and drums. M. H. Mawhinney of the Electric Furnace Co., Salem, Ohio, will talk on distribution of heat in combustion furnaces.

Sports to Enliven Frolic Of Illinois Marketers

GALESBURG, Ill., July 15.—The annual summer frolic of the Illinois Petroleum Marketers Association will be held at the Soangetaha Club, at Galesburg, Aug. 15, according to E. R. Kennedy, of Kennedy Oils, here.

A representative from the Department of Finance of Illinois will explain the new 3 cent gasoline tax and inspection law going into effect Aug. 1.

Among some of the attractions at the outing will be swimming, tennis, baseball and other sports. The club has an 18-hole golf course, said to be the finest in the state. A fried chicken dinner will be served at the club.

Oil Men Aid Record Flight

(By Telegraph)

LOS ANGELES, July 15.—Paul Whittier, son of late Max Whittier, pioneer California oil man, played a prominent part in helping Mendell and Reinhart to make their record breaking air flight of 246 hours at Culver City last week. An improved lubricating system devised by Whittier and Reinhart was said to be largely responsible for the success of the flight. Whittier also helped finance the project and was in complete charge of both ground crew and refueling ship, which he piloted. The Richfield Oil Co. which furnished gasoline, motor oil and grease for the flight, gave a complimentary dinner to the flyers and their supporters on June 15.

Prices 10 Years Ago
July 14, 1919

	Oklahoma	Penna.
58-60 U. S. Motor	17.00-17.25	20.50-21.00
80-84 Natural	23.50	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	9.00	10.75-11.00
Fuel Oil (24-26 Okla.; 38-40 Pa.)	$0.80	4.25-4.75
Crude (Okla. 35-35.9)	$2.25	$4.00
Chicago tank wagon	.....	22.50c

Prices A Year Ago
July 16, 1928

	Oklahoma	Penna.
58-60 U. S. Motor	8.3916c	10.50-11.00c
Grade A Natural	8.50c	.....
Kerosene (Ok. 41-43; Pa. 47 w. w.)	4.75c	6.875-7.25c
Fuel Oil (Ok. 24-26; Pa. 36.40)	$0.675-$0.70	4.75-5.125c
Crude (Ok. 35-35.9)	$1.25	$3.10
Chicago tank wagon	.....	14.00c

Chicago Resale Market

Gasoline Prices Fall as Buying Lags

Staff Special
CHICAGO, July 13

DEPRESSION cast itself over the Chicago gasoline market this week. In spite of abnormally high temperatures which prevailed throughout the middle west, making for record breaking consumption of gasoline, spot demand failed to increase materially.

Prices lost considerably more ground, and many well informed traders were inclined to think the bottom had not been reached. All in all, the majority of the Chicago trade found it pretty tough going.

The market was lacking in any particularly outstanding feature, except possibly for the gradual decline in prices. Big buying that was expected in many quarters following the July 4 holiday and the ensuing week-end failed to materialize. There weren't even any sizable inquiries from jobbers. Apparently, according to reports, jobbers were content to stand by and let the market run its course, buying only an occasional car now and then when they saw their stocks nearing the danger point.

The market opened Monday with the majority of larger Oklahoma refiners still quoting 9.25 cents for U. S. Motor. By late afternoon, however, several of them had reduced their quotations to 8.50 cents. A few refiners reported they had dropped their prices only to 9 cents but on Tuesday they likewise lowered their quotations to 8.50 cents.

Lower prices, it was learned, had been discussed by the major refiners for several days and the exceptionally small volume of spot orders that accumulated over the week end, as witnessed on Monday morning, was the deciding factor in determining the lower market.

Carlot marketers early in the week stated numerous refiners in areas outside of Oklahoma reported being in dire need of shipping instructions and were offering U. S. Motor for resale at prices that figured 8 to 8.125 cents to the jobber on a Group 3 basis. Sales at these prices, they stated, were only fair.

Toward the end of the week they were offering goods to the trade at 7.875 cents and up. Rumors also were running rampant to the effect that offers direct to the trade were being made at considerably lower prices but most of these were discovered to have been without foundation.

One large reseller, however, verified the fact that he had been offered 50 cars of strictly U. S. Motor specification gasoline at under 7.75 cents by an Oklahoma refiner.

Other commodities in the Chicago market were generally quiet with prices for kerosene showing a downward tendency and heavy fuel oils holding their last week's price advances.

The small volume of 41-43 water white kerosene sold over the week moved largely at 5.50 to 5.75 cents but on Friday and Saturday this grade was offered in several quarters at 5.375 cents.

Demand for 18-22 low sulfur oil was better than for other grades of fuel. The bulk of sales of this grade were at a minimum of $0.55 a barrel, although one deal involving a large quantity was said to have been closed at $0.50 a barrel.

Phillips Enlarges Borger Refinery

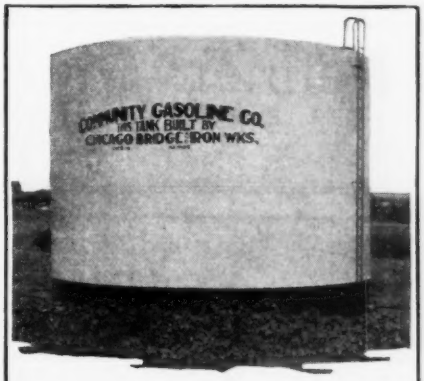
TULSA, July 13.—The Phillips Petroleum Co. is planning an immediate enlargement program at its refinery at Borger, Tex., according to an announcement from the company's offices at Bartlesville. The refinery will be enlarged from 10,000 barrels to 15,000 barrels capacity.

The increased capacity was reported necessary because of the increase in demand for the company's "Sixty-Six" gasoline which it is marketing in several middle western states.

F. A. Colonell In Havana

HAVANA, July 15.—F. A. Colonell, who formerly covered the United States pretty thoroughly as a representative for the Continental Oil Co., the Galena Signal Oil Co. and the Cities Service Oil Co., is now general manager of the Tide Water Oil Export Corp. at Havana.

Due to many requests from friends in the United States as to his whereabouts, Mr. Colonell advises through NATIONAL PETROLEUM NEWS that he may be reached in care of the Tide Water at Apartado 10, Havana. He has been here about a year. Mr. Colonell asks "how about boosting Havana for the next A.P.I. convention?"



Field Erected Tanks for Marketers

Adequate storage capacity in field erected tanks enables marketers to stock up when prices are low and turn mid-summer price increases into profits. For the past four years the refinery price for motor gasoline has been an average of 1½ cents higher in July than in April.

Let us quote you our price for installing standard capacity tanks ranging from 25,000 gallons up.

Chicago Bridge & Iron Works

Chicago - - - 2125 Old Colony Bldg.
New York - 3145 Hudson Terminal Bldg.
Cleveland - - 2206 Union Trust Bldg.
Dallas - - - - - 3339 Magnolia Bldg.
Atlanta - - - - - 1050 Healey Bldg.
San Francisco - - - 1060 Rialto Bldg.

You Sell 50 Gallons Instead of "5"

Turn your "drive in" customers into bulk buyers and get ALL their business. Double and treble your volume of gas and oil sales. Others are doing it. So can you with this new

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Distributing one of these pumps with bulk sales is a real way of boosting sales and of tying up with your customers for repeat business. Mail coupon today for descriptive literature.

Kwart Kwick Dep't.
VIKING PUMP COMPANY
Cedar Falls, Ia.

--------- MAIL THIS ---------

Viking Pump Co., Dep't. B.

Please send details and prices on your Kwart Kwick Pump.

Name.....
Town.....
State.....

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect July 15

	Price F.O.B. Group 3	*Price F.O.B. Point of Origin*	*If for Particular Destination*
Oklahoma	8.4794 (Wt. Avg.)	8.4794 (Wt. Avg.)	
Kansas	8.50		S. O. Neb. & Ind. Ter., etc.
Kansas		8.7500 (Wt. Avg.)	Kansas only.
North Texas	8.00-8.375	8.00-8.375	
West Texas	8.25	8.00-8.25	
Louisiana-Ark.	8.50		Mich., Ohio & Indiana.
Louisiana-Ark.		9.00	State or differential haul
Indiana-Illinois	8.50	*	S. O. Ind. territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Weighted Average Prices

OKLAHOMA

	July 15		July 8		July 1	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of cars**	**Price**
58-60 U. S. Motor, 437 e. p.	79	8.4794	85	9.0353	81	9.2222
60-62 437 e. p. gasoline	No sales reported		2	9.3125	No sales reported	
60-62 400 e. p. gasoline	3	8.8333	2	9.3750	2	9.2500
64-66 375 e. p. gasoline	1	9.2500	No sales reported		1	9.7500

The relatively small volume of gasoline moving out of Oklahoma as shown in the above figures is accounted for largely by competition from other areas, although exceptionally quiet spot demand in the entire Mid-Continent accounts for it in a measure.

The steadiness of the weighted averages more or less verifies the reported reluctance of Oklahoma refiners to meet the outside competition.

KANSAS

	July 15		July 8		July 1	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of cars**	**Price**
58-60 U. S. Motor, 437 e. p.	3	8.7500	25	9.5150	49	9.4974

For shipment within the State, Kansas refiners continued to maintain the usual differential over Group 3 as evidenced by the above weighted average prices. Some deviations from the 9.50 cent price were brought about by efforts to get immediate shipping instructions.

GASOLINE AND NAPHTHA

OKLAHOMA	Prices July 15	Prices July 8	Prices July 1
48-50 450 e.p. naphtha	8.25 – 8.75	8.625– 9.00	8.75 – 9.00
50-52 450 e.p. naphtha	8.25 – 8.75	8.625– 9.00	8.75 – 9.00
56-58 450 e.p. gaso'ine	8.125– 8.25	8.375– 8.75	8.50 – 8.75
58-60 450 e.p. gasoline	8.125– 8.375	8.50 – 8.875	8.625– 8.875
64-66 390 e.p. gasoline	9.00 – 9.375	9.25 – 9.50	9.50
68-70 350-360 e.p. gasoline	9.50 – 9.625	9.625–10.00	9.625–10.00

†Prices nominal ††Only one refiner quoting *Quotations only

CHICAGO RESALE (F. o. b. Group 3, altho goods may originate elsewhere)

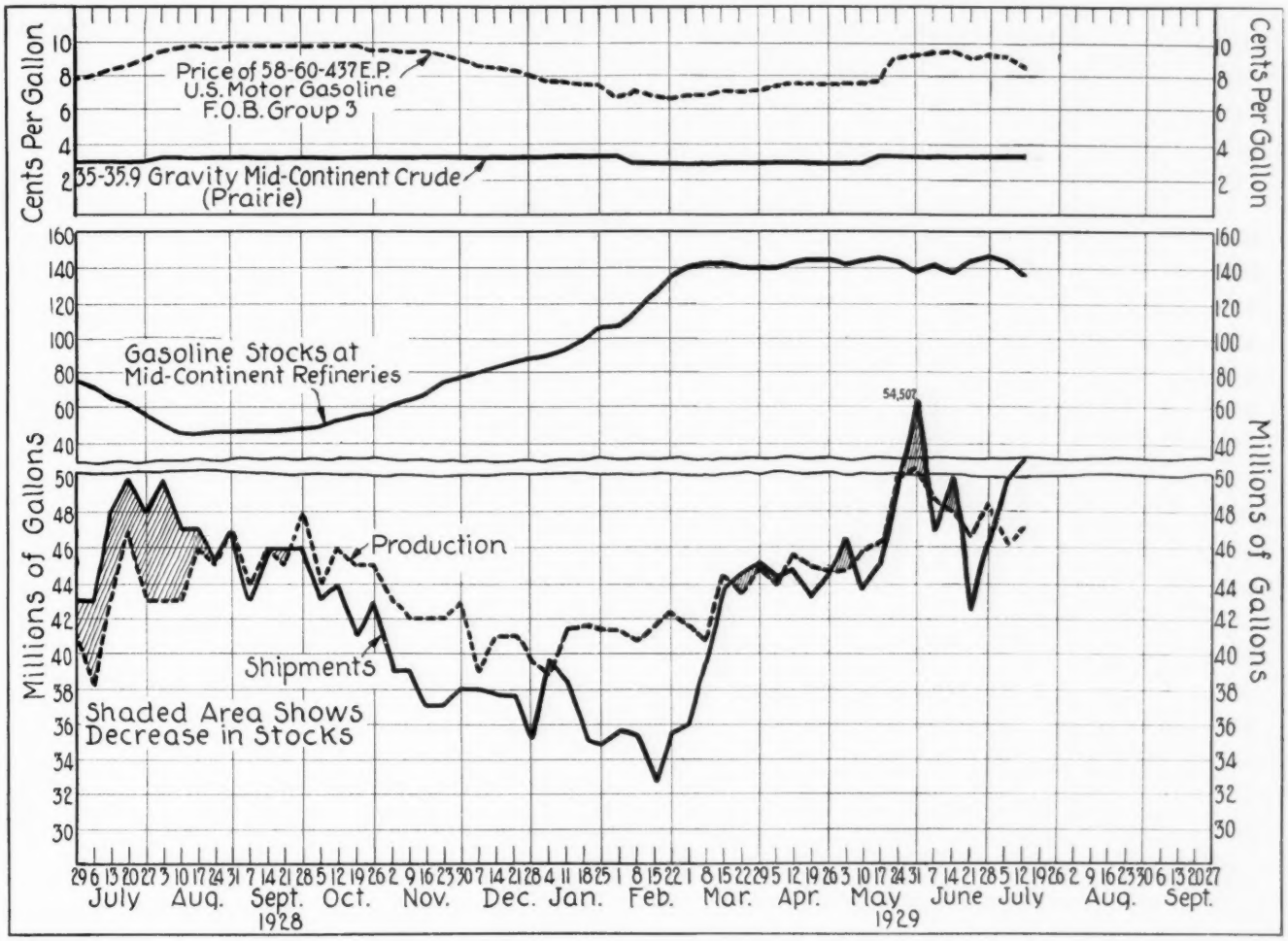
	Prices July 15	Prices July 8	Prices July 1
58-60 U. S. Motor, 437 e.p.	7.875– 8.50	8.125– 9.00	8.25 – 9.25
60-62 437 e.p. gasoline	8.25 – 8.625	8.50 – 9.375	8.625– 9.375
60-62 400 e.p. gasoline	8.50 – 8.75	8.75 – 9.50	8.875– 9.50
64-66 375 e.p. gasoline	8.875– 9.25	9.125– 9.75	9.125– 9.75

(Continued on Page 130)

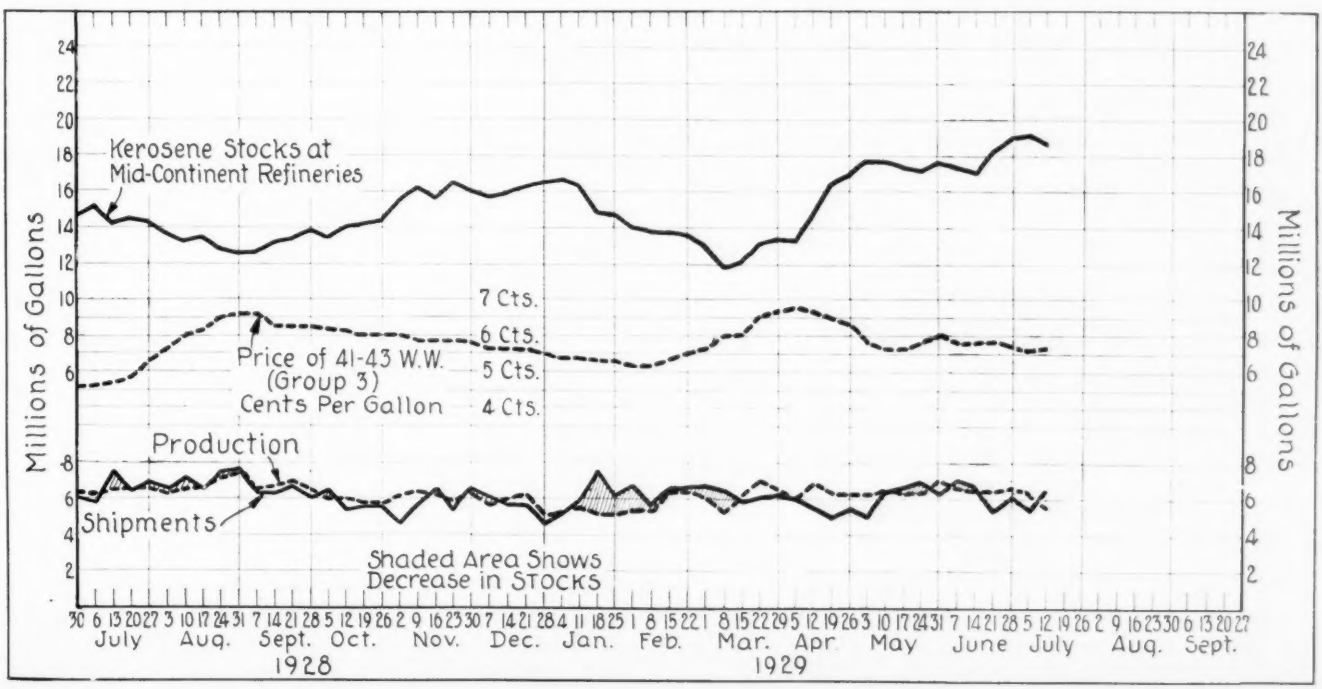
**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending July 12

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
54,507
Millions of Gallons
Production
Shipments
Shaded Area Shows Decrease in Stocks
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 122



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

PENNSYLVANIA	Prices July 15	Prices July 8	Prices July 1
52-54 Naphtha	9.25 – 9.75	9.50 –10.00	9.50 –10.00
54-56 Naphtha	9.25 –10.00	9.50 –10.25	9.50 –10.25
58-60 U.S. Motor 437 e.p.	10.25 –10.75	10.25 –10.75	10.25 –10.75
60-62 400-410 e.p. gasoline	10.25 –11.25	10.50 –11.00	10.50 –11.00
64-66 390 e.p. gasoline	10.50 –11.50	10.75 –11.50	10.75 –11.50
68-70 Str-run gas 350-360 e.p.	10.75 –12.50	11.50 –12.50	11.50 –12.50
OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)			
U. S. Motor Gasoline			
Ohio, delivery at any point	12.00	12.00	12.00
KANSAS (F. O. B. refinery Kansas destination)			
60-62 400 e.p. gasoline	9.25 – 9.50	9.50 – 9.875	9.75 –10.00
64-66 375 e.p. gasoline	9.50 – 9.75	9.75 –10.00	10.00 –10.25
NORTH TEXAS			
48-52 450 e.p. naptha	8.00 – 8.25	8.125– 8.375	8.25 – 8.50
56-58 450 e.p. gasoline	7.75 – 8.25	8.00 – 8.375	8.25 – 8.50
58-60 450 e.p. gasoline	7.75 – 8.25	8.00 – 8.375	8.25 – 8.50
58-60 U.S. Motor 437 e.p.	8.00 – 8.375	8.125– 8.50	8.25 – 8.75
60-62 400 e.p. gasoline	8.25 – 8.75	8.50 – 9.00	9.00 – 9.125
64-66 390 e.p. gasoline	8.50 – 9.00	8.75 – 9.25	9.00 – 9.375
64-66 375 e.p. gasoline	8.625– 9.00	8.875– 9.375	9.375– 9.50
68-70 350-360 e.p. gasoline	9.00 – 9.375	9.25 – 9.75	9.50 – 9.75
****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**			
50-52 naphtha	7.75 – 8.00	7.75 – 8.00	8.00
56-58 437 e.p. gasoline	7.75 – 8.25	8.00 – 8.25	8.00 – 8.375
58-60 437 e.p. gasoline	8.00 – 8.25	8.00 – 8.50	8.375– 8.75
NORTH LOUISIANA (N. La., Ark., and Miss. destination)			
58-60 U.S. Motor, 437 e.p	9.00	9.00	9.50
ARKANSAS (Ark., N. La. and Miss. destination)			
58-60 U.S. Motor 437 e.p.	9.00	9.00	9.50
61-63 390 e.p. gasoline	....	....	9.625
CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)			
54-58 U.S. Motor 437 e.p.	7.75 –10.00	8.00 –10.25	8.00 –10.00
58-61 375-400 e.p. gasoline	10.00 –11.00	9.00 –11.25	9.00 –11.00
42-45 Engine Distillate 445-480 e. p.	7.50 – 8.50	7.50 – 8.50	7.00 – 8.50

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	6.375– 6.50	7.00 – 7.25	7.25 – 7.375
Grade A, 72-79.9, 90% Recovery	6.375– 6.50	7.00 – 7.25	7.25 – 7.375
Grade BB, 84-92, 85% Recovery	*5.75	*6.25 – 6.375	6.25
Grade B, 76-83.9, 85% Recovery	*5.75	*6.25 – 6.375	6.25
Grade C, 80-90, 78% Recovery	*5.75	*6.25 – 6.375	6.25
NORTH TEXAS (F. o. b. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	6.375– 6.50	7.00 – 7.25	7.25 – 7.375
Grade A, 72-79.9, 90% Recovery	6.375– 6.50	7.00 – 7.25	7.25 – 7.375
Grade BB, 84-92, 85% Recovery	*5.75	*6.25 – 6.375	6.25
Grade B, 76-83.9, 85% Recovery	*5.75	*6.25 – 6.375	6.25
Grade C, 80-90, 78% Recovery	*5.75	*6.25 – 6.375	6.25
NORTH LOUISIANA (F. o. b. Monroe District)			
Grade AA	†6.75	†7.50	†7.50
Grade BB	†6.00	†6.625	†6.50
Grade C	†6.00	†6.625	†6.50
CALIFORNIA			
75-85, 375-390 e.p. blend	8.75 – 9.50	8.75 – 9.50	8.50 – 9.00

BURNING OILS

PENNSYLVANIA	Prices July 15	Prices July 8	Prices July 1
45 w.w. kerosene	6.25 – 6.75	6.25 – 6.75	6.375– 6.75
46 w.w. kerosene	6.50 – 7.00	6.50 – 7.00	6.75 – 7.00
47 w.w. kerosene	6.875– 7.50	7.00 – 7.50	7.125– 7.50
300 mineral seal	7.25 – 7.375	7.25 – 7.75	7.50 – 7.75
CHICAGO RESALE (F. o. b. Group 3, altho goods may originate elsewhere)			
41-43 w.w. kerosene	5.375– 5.625	5.50 – 5.75	5.50 – 5.75
OKLAHOMA			
41-43 w.w. kerosene	5.50 – 5.75	5.50 – 5.75	5.625– 5.875
42-44 w.w. kerosene	6.00 – 6.25	6.125– 6.25	6.25 – 6.375
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	6.00 – 6.25	6.125– 6.50	6.25 – 6.50
42-44 w.w. kerosene	6.25 – 6.50	6.50 – 6.75	6.75
NORTH TEXAS			
40-42 w.w. kerosene	5.00	5.25	5.375
41-43 w.w. kerosene	5.00 – 5.375	5.25 – 5.50	5.375– 5.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene	6.125	6.125– 6.50	6.25 – 6.50
42-44 w.w. kerosene	6.375	6.625– 6.75	6.75
ARKANSAS (Ark., N. La. and Miss. destination)			
41-43 kerosene	6.125	6.125– 6.50	6.25 – 6.50
42-44 kerosene	6.375	6.625– 6.75	6.75
CALIFORNIA			
38-40 w.w. kerosene	5.50 – 6.50	5.50 – 6.25	5.50 – 6.50

NEUTRAL OIL

PENNSYLVANIA			
Vis.	**(Viscosity at 70°F.)**		
200 No. 3 Assoc. Filt.	28.00 –29.00	28.00 –29.50	28.00 –29.50
180 No. 3 Assoc. Filt.	24.00 –26.00	24.00 –26.00	25.00 –27.00
150 No. 3 Assoc. Filt.	20.00 –21.50	20.00 –21.50	20.50 –21.50
	(Non Viscous)		
34 Grav. 330-340 Flash	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
****OKLAHOMA**			
Vis. Color	**(Viscosity at 100°F.)**		
100—No. 2	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00
150—No. 3	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
150—No. 4	6.75 – 7.50	6.75 – 7.50	6.75 – 7.50
180—No. 3	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
180—No. 4	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
180—No. 5	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
200—No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200—No. 4	9.00 –10.25	9.00 –10.25	9.00 –10.25
200—No. 5	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
240—No. 4	12.00 –13.00	12.00 –13.00	12.00 –13.00
240—No. 5	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3	14.00 –16.00	14.00 –16.00	14.00 –16.00
280—No. 4	13.00 –15.00	13.00 –15.00	13.00 –15.00
280—No. 5	12.00 –14.00	12.00 –14.00	12.00 –14.00
300—No. 5-6	16.00 –17.00	16.00 –17.00	16.00 –17.00

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis. Color	Prices July 15	Prices July 8	Prices July 1
	(Viscosity at 100°F., pour test 0)		
100—No. 2 Pale	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25
200—No. 3 Pale	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
300—No. 3 Pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
500—No. 3½ Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
750—No. 4 Pale	13.25 –13.75	13.25 –13.75	13.25 –13.75
200—No. 5½ Red Oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
300—No. 5½ Red Oil	9.75 –10.25	9.75 –10.25	9.75 –10.25
500—No. 6 Red Oil	11.00 –11.50	11.00 –11.50	11.00 –11.50
750—No. 6 Red Oil	12.00 –12.50	12.00 –12.50	12.00 –12.50

CALIFORNIA

Vis. Color		(Viscosity at 100°F.)	
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200D Vis. at 210° Brt. St.	37.00 –41.00	37.00 –41.00	37.00 –41.00
150-160D Vis. at 210° Brt. St.	36.00 –37.00	36.00 –37.00	36.00 –37.00
150-160E Vis. 210° Brt. St.	29.00 –33.00	29.00 –33.00	29.00 –33.00
600 St. Ref. Olive Green	14.00 –19.00	14.00 –19.00	15.00 –20.00
600 St. Ref. Dark Green	14.00 –16.00	14.00 –16.00	13.50 –16.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	28.00 –30.00	28.00 –30.00	28.00 –31.00
650 Steam Refined	35.00 –37.00	35.00 –39.00	37.00 –39.00
600 Flash	37.00 –41.00	37.00 –43.00	41.00 –43.00
625 Flash	39.00 –45.00	39.00 –45.00	44.00 –45.00
600 Warren E	35.00 –36.50	36.50 –37.00	36.50 –37.00
600 Oil City E	34.00 –36.00	35.00 –36.00	35.50 –36.00
600 D Filtered	38.50 –40.00	38.50 –41.00	40.00 –41.00
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	52.00 –53.00	50.00 –54.00	53.00 –55.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	51.00 –52.00	49.00 –52.00	51.00 –52.00

WAX

PENNSYLVANIA (Per pound, New York)

122-124 white crude scale, a. m. p.	2.75 – 3.00	2.625– 3.00	2.625– 2.875
124-126 white crude scale, a. m. p.	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00

OKLAHOMA

**124-126 White Crude Scale, a. m. p.	2.50 – 2.75	2.50 – 2.75	2.50 – 2.625

CALIFORNIA

White crude scale, per pound, ton lots, a. m. p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.50 – 5.00	4.375– 5.00	4.625– 5.00
30-34 fuel oil	4.25 – 4.50	4.25 – 4.50	4.375– 4.50
28-32 fuel oil	4.25 – 4.50	4.25 – 4.50	4.375– 4.50

CHICAGO RESALE (F. o. b. Group 3, altho goods may originate elsewhere)

	Prices July 15	Prices July 8	Prices July 1
38-40 straw distillate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
32-36 ordinary dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 dark zero gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
32-36 straw zero gas oil	2.625– 2.875	2.625– 2.875	2.625– 2.875
28-30 zero fuel oil	$0.925–$0.95	$0.925–$0.95	$0.875–$0.95
28-30 fuel oil	$0.875–$0.90	$0.875–$0.90	$0.85 –$0.90
24-26 fuel oil	$0.675–$0.725	$0.675–$0.725	$0.675–$0.725
18-22 fuel oil, low sulfur	$0.55 –$0.60	$0.55 –$0.60	$0.55 –$0.60
18-22 fuel oil, high sulfur	$0.50 –$0.55	$0.50 –$0.55	$0.50

OKLAHOMA

38-40 straw distillate	†3.375– 3.50	†3.375– 3.625	†3.25 – 3.50
36-38 straw distillate	†3.125– 3.25	†3.125– 3.25	†3.125– 3.25
32-36 straw gas oil	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 straw zero gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
28-30 zero fuel oil	$0.925– 0.95	$0.925– 0.95	$0.90 – 0.95
28-30 fuel oil (in bbls.)	$0.875– 0.925	$0.875– 0.95	$0.875– 0.95
26-28 fuel oil (in bbls.)	$0.775– 0.85	$0.775– 0.85	$0.75 – 0.80
24-26 fuel oil (in bbls.)	$0.70 – 0.825	$0.70 – 0.80	$0.675– 0.75
22-26 fuel oil (in bbls.)	$0.60 – 0.65	$0.60 – 0.65	$0.60 – 0.625
18-22 fuel oil (in bbls.)	$0.525– 0.575	$0.525– 0.575	$0.50 – 0.55
16-18 fuel oil (in bbls.)	$0.475– 0.525	$0.45 – 0.50	$0.45 – 0.50
14-16 fuel oil (in bbls.)	$0.475– 0.525	$0.45 – 0.50	$0.45 – 0.50

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	3.375– 3.625	3.375– 3.625	3.375– 3.625
36-38 straw distillate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.375
32-36 gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
24-26 fuel oil	$0.75 – 0.775	$0.725– 0.775	$0.70 – 0.75
18-22 fuel oil	$0.625– 0.70	$0.625– 0.70	$0.625– 0.70
10-14 fuel oil	$0.50 – 0.575	$0.50 – 0.575	$0.50 – 0.575

NORTH TEXAS

38-40 straw distillate	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
32-36 gas oil, cracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 St. reduced gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
24-26 fuel oil (in bbls.)	$0.65 – 0.70	$0.65 – 0.70	$0.625– 0.70
20-24 fuel oil	$0.65 – 0.70	$0.65 – 0.70	$0.625– 0.70

**WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.00 – 2.125	2.375– 2.50	2.375– 2.50
30-32 gas oil	2.25 – 2.375	2.00 – 2.25	2.25
18-22 fuel oil	$0.375– 0.45	$0.40 – 0.45	$0.375– 0.45

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	2.50 – 2.75	2.50 – 2.75	2.625– 3.00
32-36 gas oil, straw	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
14-16 fuel oil (in bbls.)	$0.70 – 0.80	$0.75 – 0.80	$0.75 – 0.80

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.00	3.00	3.00
32-36 gas oil	3.00	3.00	3.00
28-30 gas oil	2.50 – 2.75	2.50 – 2.75	2.625– 2.75
14-16 fuel oil	$0.70 – 0.80	$0.75 – 0.80	$0.75 – 0.80

CALIFORNIA (F. o. b. San Joaquin Valley. At San Francisco, 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.55 –$0.65	$0.55 –$0.65	$0.55 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.65 –$0.75
30-34 gas oil (per bbl.)	$0.85 –$1.05	$1.05 –$1.10	$0.95 –$1.05
27 Plus Diesel oil (per bbl.)	$0.95 –$1.00	$0.95 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.

Snow White	8.375– 8.50	8.375– 8.50	8.25 – 8.50
Lily White	7.375– 7.625	7.375– 7.625	7.25 – 7.625
Cream White	6.375– 6.625	6.375– 6.625	6.25 – 6.625
Light Amber	3.625	3.625	3.50 – 3.625
Amber	3.375	3.375	3.25 – 3.375
Red	3.125	3.125	3.00 – 3.125

PETROLEUM COKE

**OKLAHOMA

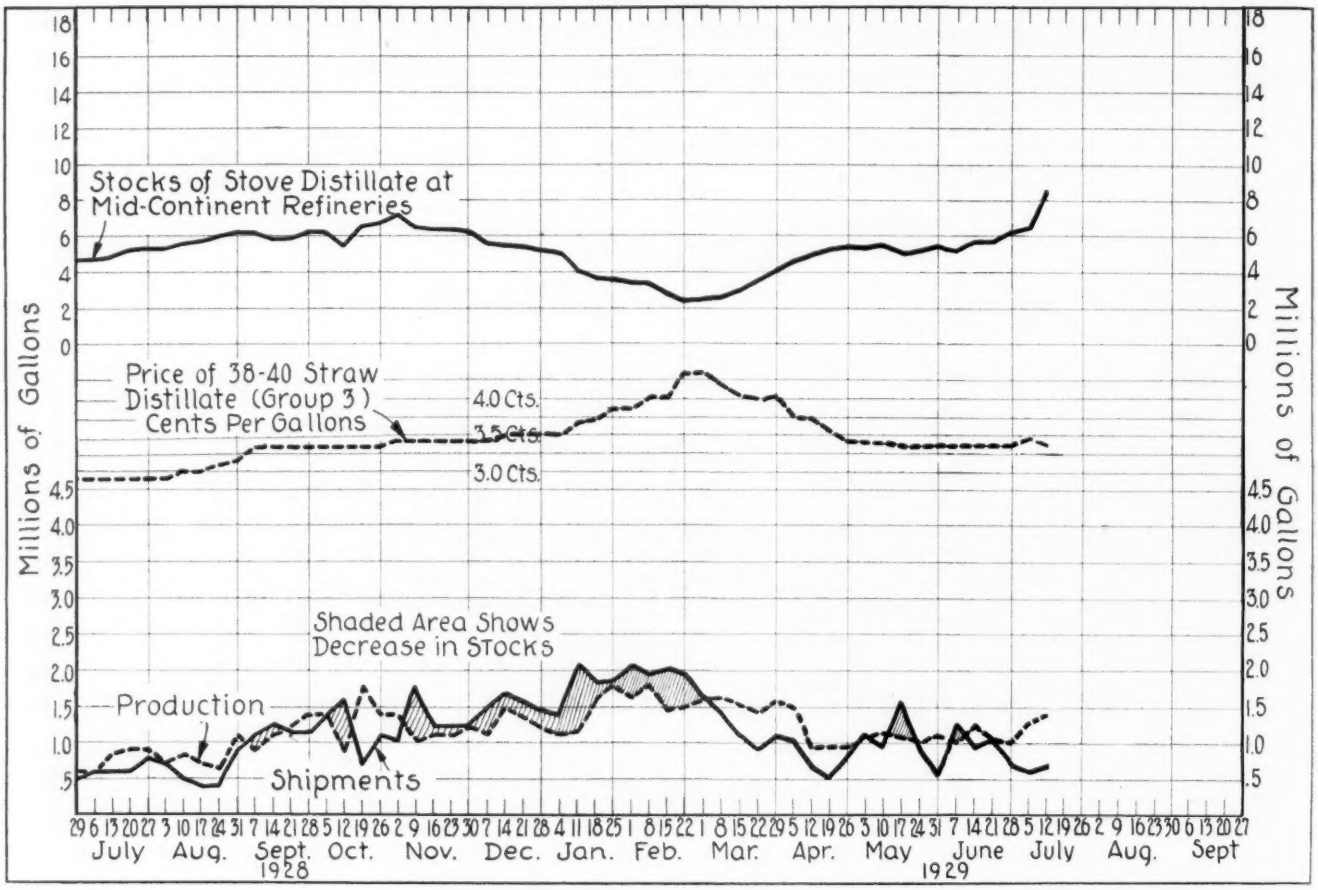
(Per ton in car lots)

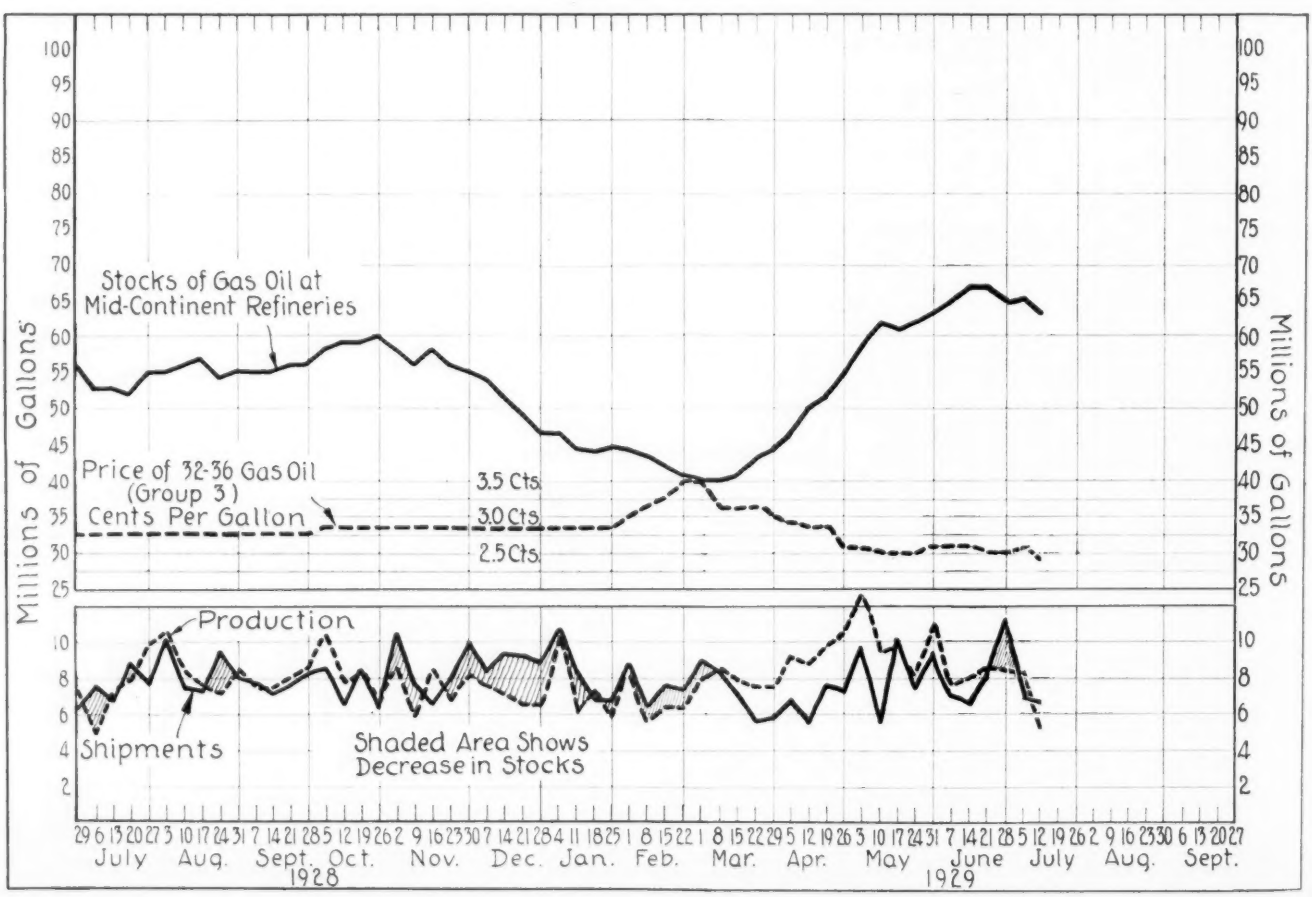
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents both sales and quotations

Barometer of Mid-Continent Refinery Market—Week Ending July 12

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
Millions of Gallons
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallons
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shaded Area Shows Decrease in Stocks
Production
Shipments
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept
1928
1929


Stocks of Gas Oil at Mid-Continent Refineries
Millions of Gallons
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1928
1929

Make Car Washing *Easy and More* Profitable

This Champion CW-1 Gun Washer delivers 5 gal. of water per minute at 300 lbs. pressure with a 1½ H.P. Motor Silent Chain Drive.

Champion Automatic Air Meter Tower MT-5. This is the newest of Champion Service Tower designs. After signal stops sounding, tire is properly inflated and no more air can flow into tire. Lamp inside of meter illuminates dial at night. Send for literature.

The Champion Equipped Service Station Is Busiest.

Mr. Service Foreman: With a Champion self-oiling car washer, you are equipped to do better and faster work. Repeat business is assured and no amount of advertising you could do would equal the value of satisfied customers who naturally recommend you to their friends.

Before you invest in a car washer, Mr. Service Foreman, learn all the exclusive Champion features. Learn what it means to have a washer that is totally enclosed with all the pump mechanism operating in a bath of oil.

Champion car washers are made in six different sizes.

Champion Quality—Cheapest in the Long Run

Champion means long life—best of service—and at a lower net cost. Champion economy of operation and upkeep makes Champion Equipment Cheapest in the long run.

There is a Champion Automatic Ball Bearing Air Compressor—a Champion Service Tower—a Champion Air Compressor for Paint Spraying—a Champion Spring Oiler—a Champion Self Oiling Car Washer—for every kind and size of Service Station.

Write or mail coupon for complete information regarding the type of equipment you need.

CHAMPION PNEUMATIC MACHINERY CO.

8168 S. Chicago Ave., Chicago, Ill. ***Cable Address:*** **CHAMPION—Chicago**

Please send me information regarding—

Check Equipment You Need

- ☐ Champion Automatic Ball Bearing Air Compressors
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- ☐ Champion Spray Guns and other equipment.
- ☐ Champion Ceiling Service Reel.
- ☐ Champion Service Towers.
- ☐ Champion Self Oiling Car Washers.

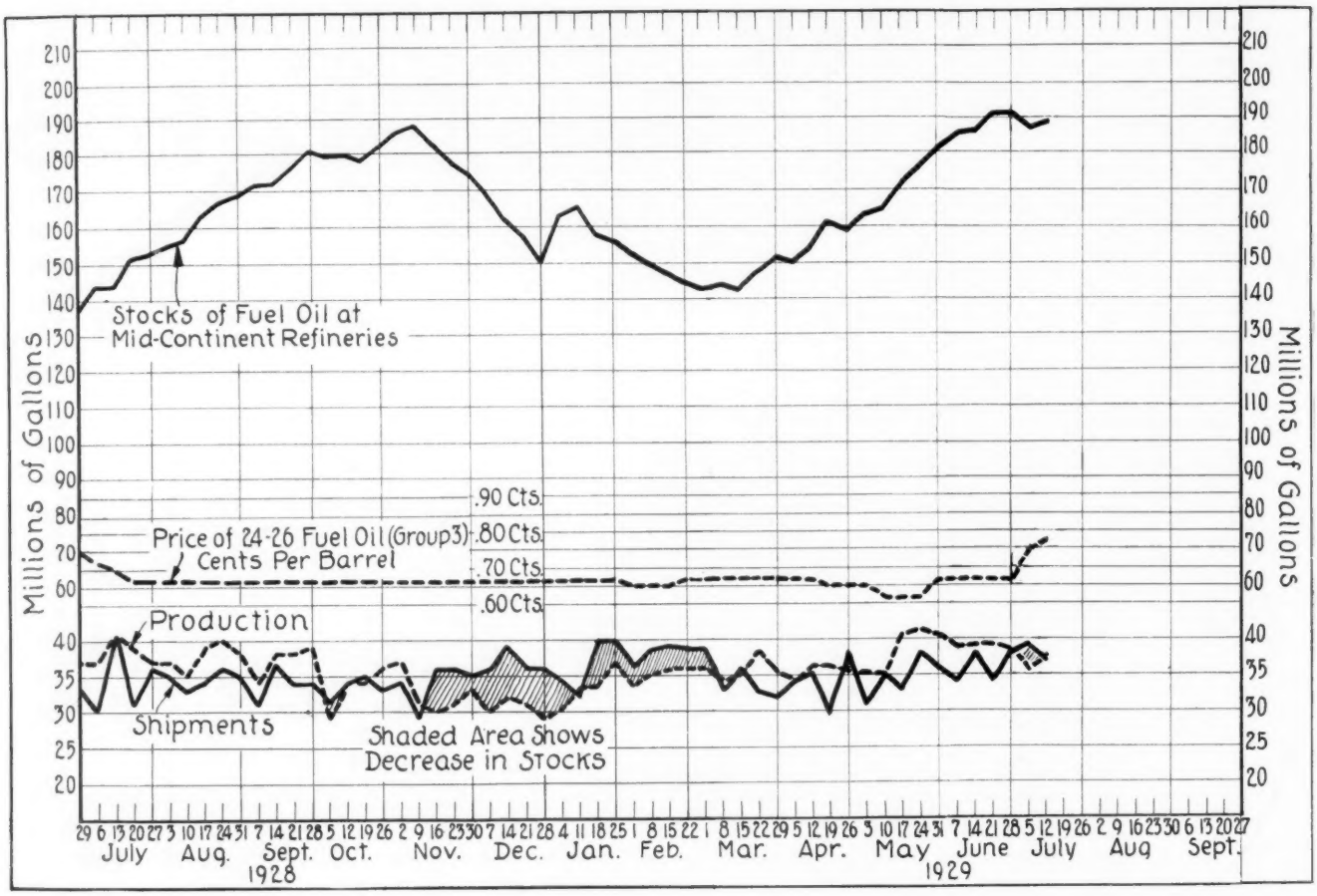
Name .....

Address .....

City and State .....

Barometer of Mid-Continent Refinery Market—Week Ending July 12

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Cargo of Gasoline Sold at 7 Cents

LOS ANGELES, July 11

CALIFORNIA exporters generally continued to hold the price of U. S. Motor at from 7 to 7.50 cents this week, although there was a tendency on the part of some to shade these quotations. One cargo was reported sold at 7 cents, destination to be the Atlantic seaboard.

One shipper stated that he thought the quoted price would not be shaded much within the coming months and that price conditions on the Atlantic coast warranted at least 7 cents at the present time.

The Japanese government is reported to have purchased one half million barrels of fuel oil at a price of 65 cents.

California tank car markets were exceedingly inert during the past week. Although a few inquiries came in from out of state buyers, none of them had resulted in sales up to the close of business July 11.

Several spot sales for small quantities of fuel oil, gas oil, and gasoline were reported at prices that varied little from those posted last week. One dealer reported that he had sold some gas oil at about 82.50 cents, which is slightly under the generally accepted low of 85 cents for this commodity. Some fuel oil continued to move at a shade under 55 cents and a number of promising inquiries were reported that are expected to develop during the next week.

Local suppliers reported activity in kerosene markets at a price of 5.75 to 6 cents, with some reported sold at 5.50 cents, and others stated that they would shade 5.75 on a firm offer.

A number of 16.5 cent signs have appeared, during the past week at service stations reselling Independent gasolines. Major refiners have controlled the situation heretofore by refusing to furnish their gasoline to service station operators who posted prices lower than 17.5 cents. Rushing business in cheap gasoline has caused many operators to disregard this mandate, many of them selling as much as four times the amount of cheap gasoline as major products.

The status of official service station, and tank wagon prices and the advisability of maintaining them may be determined in California courts within the near future according to Los Angeles County officials. The county, which buys 800,000 gallons of gasoline each year, is under contract at the present time with the Seaboard Petroleum Co. to buy its gasoline at 3 cents under the tank wagon price.

The purchasing agent for the county insists that this meant 3 cents under the 15½ cents paid by the reseller during the past gasoline war and not the posted tank wagon price of 18½ cents. The dispute involves $24,000.

Pennsylvania Market

Large Kerosene Purchase Made

CLEVELAND, July 15.—Kerosene became active in the western Pennsylvania market late last week when large quantities were purchased for eastern shipment.

Several hundred thousand gallons of 45 w.w. kerosene were bought at 6 cents. Purchases were reported to have been made in Oil City, Warren, Titusville and Bradford districts. The kerosene was to be shipped east within 30 days for storage, it was said.

The spot kerosene market passed through the buying at 6.25 cents bottom for 45 w.w. Some refiners today reported no difficulty in getting their 6.50 cent price for 45 w.w.

Spot market conditions were unaltered through last week. Bright stock continued to be in good demand, with goods none too plentifully offered. Gasoline was in good demand in some districts and in fair demand in others.

Neutrals generally were quiet, but one refiner reported no stocks on hand and sufficient orders on his books to take care of production. Cylinder stocks were not active.

Bright stock continued to sell at 52 to 53 cents for light and 51 to 52 cents for dark. Some lower priced bright stock was offered early last week, but was taken off the market.

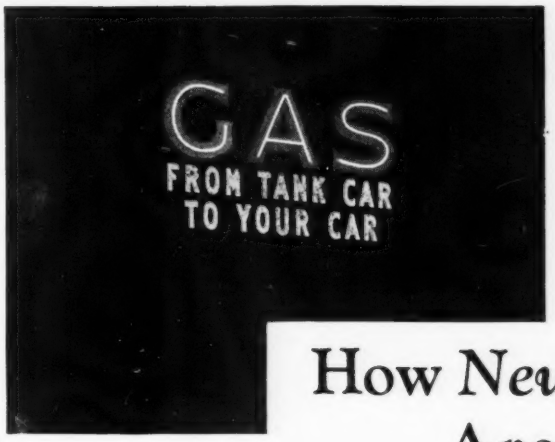
U. S. Motor gasoline market ranged from 10.25 to 10.75 cents.

More inquiries were reported in the market for wax. Quotations on 122-124 and 124-126 white crude scale were 2.75 cents bottom. Some sellers asked 3 cents.

Battenfeld Not Withdrawing From The South

CLEVELAND, July 12.—The Battenfeld Grease & Oil Co. is notifying the jobbing trade in the south that it is not withdrawing from business in this territory, to offset an impression which some in the trade gained when it was recently announced the company was dissolving the Battenfeld Grease & Oil Co. Inc., of Louisiana.

The aim of the Battenfeld interests in starting the company at New Orleans had been to make its products more easily accessible to jobbers in the south. Due to the large number of customers using lithographed cans or special greases, a large volume of this business, however, continued to move from the Kansas City plant. The company announces it will continue to care for this southern trade, making shipments promptly from its Kansas City plant.



Flaming red neon in pleasing and effective contrast with Flexlume raised glass letters.

How *New* Customers Are Won

WHERE can a filling station, ambitious to grow, find its needed new customers easier and nearer than in the daily throng of passing motorists.

Motorists in increasing numbers will patronize you if you will plainly show the way . . . if you will feature your location, name and kind of gas and oil with the electrically brilliant words of a Flexlume sign.

Specialists, trained by us to help you select an unusually distinctive electric sign, are located in our sales and service offices in many cities throughout America. A call by them will neither embarrass nor obligate you—look in 'phone book for "Flexlume" or write us for information. FLEXLUME CORPORATION, 1975 Military Road, Buffalo, N. Y.

Sales and Service Offices in Chief Cities of U. S. and Can. FLEXLUME *Factories at Buffalo, N. Y. and Toronto, Can.*

Neon Tube ... Glass Letter ... Exposed Lamp and Combinations of these Illuminations

FLEXLUME
ELECTRIC DISPLAYS

Made in the Largest Plant in the World Exclusively Devoted to Electric Signs

OIL IN THE TANK

Is As Good As Money In The Bank

Save Your Oil, Until Sold in
BROWN OIL TIGHT TANKS
Our Double Electric Welding Process
Insures You Against Leaks.

Get Our Figures. Compare The Specifications

BROWN SHEET IRON & STEEL CO.
SAINT PAUL, 964-1000 Berry Avenue MINNESOTA

New York Domestic Market

Weather Good; Spot Demand Slow

Staff Special

NEW YORK, July 13

THE weather this week all along the seaboard has been all that the motorist could ask for and highways near cities have been choked with automobiles, yet there has been no reflection in the spot gasoline business, suppliers report.

Opinions based on the gasoline market in past years show that the three week at July 4 have caused jobbers to take out extra supplies of gasoline. History failed to repeat itself this year and the eastern gasoline markets still were rather unsettled July 13.

The increase of 1 cent per gallon at the opening of the month by the Standard Oil Co., of New Jersey, injected some optimism in the market that now is absent. Early in the month it was the opinion that while the market might not get to 11 cents firm, it would probably advance to a 10.50-cent minimum at all points. Now the viewpoint has changed and most sellers are content to get 10 cents and one seller July 13, one who does practically all of his business on the spot market, announced that his price had been reduced for spot shipment to 9.50 cents, f.o.b. New York. Another, a principal refiner at Philadelphia, lowered his price to 10 cents July 11. He had raised his price to 10.25 only the week before.

The New York supplier who normally does a business of from 150 to 200 per month on the spot market, stated that he had lowered his price because he was being undersold and that his shipments had fallen to an average of 45 cars per month in the past two weeks.

One large refiner at New York said that he had been trying to get 10.50 cents but that he had been unsuccessful and was taking business at 10 cents. And the demand was slow, he said. Those sellers who are quoting 11 cents report they have done no business at that figure.

Jobbers continue to report that they are buying gasoline lower than 10 cents on the spot market. The suppliers claim that the goods is contract. Proof has been offered that one company has delivered gasoline in New York City, at 10 cents in tank wagon lots.

There has been no spirited demand for spot gasolines this summer. Jobbers loaded up heavily in May and the demand was not what was expected. As a result they were still operating on May stocks in June. The same thing has been true this month as several sellers said they were still shipping on June contracts. In view of the good weather the trade feels that jobbers and marketers will catch up with their contracts and be in shape for August.

There was one change in gasoline prices; Boston and Providence U. S. Motor was quoted slightly higher. The general price there, delivered, was 11 cents. One company was quoting under that and two companies were quoting higher. The latter two companies reported they were not shipping much spot gasoline into either point.

Kerosene has been inactive all week. Prices at New York and Philadelphia were 7.75 to 8 cents, with goods freely offered at the lower range. Sellers in Baltimore were quoting 8 cents flat and reported the market slow.

Other commodities were unchanged with gas oil at 4.75 to 5 cents, furnace oil 6 to 6.50 cents, Grade C bunker oil $1.05 and diesel oil at New York $2.00 to $2.10.

Gulf Export Market

Two Cargoes Are Purchased

Staff Special

NEW YORK, July 13

FOREIGN buyers purchased two cargoes from the Gulf this week. One inquiry which came into the market July 10, for a part cargo of gasoline, was open July 13. No action has been taken on a part cargo of 64-66, 375 e.p. gasoline, a French buyer was reported seeking last week.

The two cargoes totaled approximately 125,000 barrels and were for shipment to France. One was for 42,000 barrels of 64-66, 375 e.p. gasoline and 10,000 barrels of U. S. Motor for August lifting. The other was for 75,000 barrels of three grades of gasoline and 41-43 prime white kerosene. The latter cargo was divided as follows: 20,800 barrels of 64-66, 375 e.p. gasoline, 15,300 barrels of 61-63, 390 e.p. gasoline, 3400 barrels of U. S. Motor; and 21,250 barrels of kerosene. The order of kerosene is the first moved for export in about two weeks.

A French buyer who was seeking a part cargo of about 10,000 barrels of 64-66, 375 e.p. gasoline early in the week for prompt shipment, had not made the purchase July 13.

It was learned July 10 that an inquiry for 30 plus, low sulfur gas oil, mentioned some weeks ago, had been placed earlier in the month. The transaction was made at 0.97 cent per barrel, f.o.b. California port, for shipment in August or September. It was a 60,000-barrel order.

Prices on all commodities were unchanged the past week. The trade looks for no immediate change in gasoline prices. The movement on bulk gasolines has been below normal even though a number of orders from foreign buyers have been received. Several of the trade cite low prices as the reason for below normal export shipments.

The cased gasoline market presents no change over that in bulk. While orders have not been numerous prices have remained about the same.

One seller of cased goods whose company maintains no boats for transoceanic travel, stated that he was encountering some difficulty in marketing his goods. He reported that ship owners who had made connections with other companies months ago, were unwilling to accept additional business from others. One ship owner, he said, who had a cargo of 20,000 cases, refused to fill out his cargo with this refiner's goods and in another case he was unable to engage a boat that he knew was not chartered, to transport 100,000 cases of gasoline to Africa. This boat, he said, regularly engaged in the carrying of cased gasoline.

U. S. Motor at the Gulf for domestic shipment was slightly lower in price the past week. Sales there have been few. The price has been lowered from 8.25 to 8.50 cents.

Kerosene for domestic shipment also was being quoted lower, 7 cents being the price July 13. It ranged the week previous up to 7.25 cents.

CLEVELAND, July 13.—The Chilean government has appropriated $250,000 for petroleum exploration throughout the country and particularly in the Magalles district. This district has been under examination by two Chilean engineers.

Wax Market

Demand Dull; Prices Up

NEW YORK, July 13.—The wax market has been virtually lifeless this week. A few inquiries were received, all of which bid low prices, but no business to speak of was placed.

Despite the inactivity of the market, quotations on white and yellow crude scale moved up. Sellers July 13, were asking from 2.75 to 3 cents per pound for white crude scale, an increase of a 0.25 of a cent. Yellow crude scale was being quoted at 2.625 to 2.875 cents, also an increase of a 0.25 of a cent. Quotations on all grades of fully refined goods were unchanged.

Recommends Coal Rate Cut For Warren Refiners

WASHINGTON, July 15.—A 19-cent per ton cut in freight rates on coal from all districts in central and western Pennsylvania to Warren, Pa., has been recommended to the Interstate Commerce Commission by Arthur Kettler, one of its examiners who took the testimony offered in behalf of the National Petroleum Association and others in its complaint against the Baltimore & Ohio and other railroads. The Swan-Finch Refining Co., the Tidioute Refining Co., the Levi Smith Refining Co. and the Viking Oil Corp. were interveners in the complaint asking for the same sort of relief as was asked by the association.

Kettler, used the rate of $2.24 from the Pittsburgh district to Warren as illustrative. He said that that rate should be cut to $2.05 per ton and that the present relationship of one coal district to the others should be preserved; that is, that a similar cut should be made from each.

This recommendation, if adopted, will have the effect of reversing a decision of the Interstate Commerce Commission heretofore made in this case. The oil refiners in the Warren district were not satisfied with the dismissal of their complaint which was on the ground that they had not proved the present rates unreasonable or otherwise unlawful.

Gulf Lubes Firm

HOUSTON, July 15.—Manufacturers of Gulf Coastal lubricants continue to maintain a firm summer price structure at schedules recently adopted. Seasonal increase in consumption keeps the volume of business at levels higher than for several months. No large quantity buying, however, is reported.

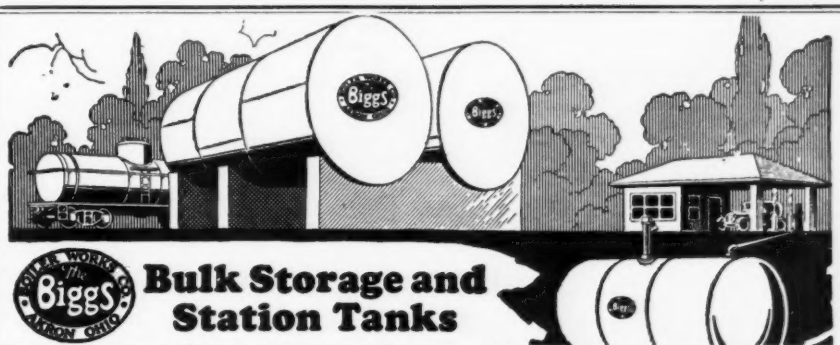
Skilled Supervision
Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans



The Biggs Boiler Works Co. Akron, Ohio

Bulk Storage and Station Tanks

Forty years successful experience; plant fully equipped for fabricating plate up to 1½" thick.
Pressure Stills for Cracking Process - Fractionating Towers - Dephlegmating Towers, Bubble Towers - Heat Exchangers - Agitators - Steam Stills - Crude Stills - Condenser Boxes, Run Down Tanks - Blending Tanks - Hemispherical Tanks - Blow Cases - Acid Tanks, Compounding Kettles - Storage Tanks to 80,000 Barrels - Smoke Stacks and Breechings, etc.

THE BIGGS BOILER WORKS COMPANY, Buchtel and Bank Streets, AKRON, OHIO
Eastern Sales Office: 50 Church St., New York *Western Sales Office:* 53 South Dearborn St., Chicago

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	July 15	July 8	July 1
New York harbor	10.00	10.00	10.00
Portland district	**11.50–11.75	**11.50–11.75	**11.50–11.75
Boston district	*11.00	**10.50–11.00	**10.50–11.00
Providence district	*11.00	**10.50–11.00	**10.50–11.00
Philadelphia district	10.00	10.00	10.00
Baltimore district	10.00	10.00	10.00
Norfolk district	10.00	10.00	10.00
Charleston district	10.00	10.00	10.00
Savannah district	10.00	10.00	10.00
Jacksonville district	10.00	10.00	10.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York habor	10.00 –10.50	10.00 –10.50	10.00 –10.50
Philadelphia district	10.00	10.00	10.00
Baltimore district	10.00	10.00	10.00
WATER WHITE KEROSENE			
New York harbor	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Philadelphia district	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Baltimore district	8.00	8.00 – 8.25	8.00 – 8.25
Gas OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
FURNACE OIL: 36-40 Gravity			
New York habor	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL†			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10
MEDICINAL OILS, RUSSIAN			
885-890 s.g. 325-330 vis.	$0.75 – 0.80	$0.75 – 0.80	$0.75 – 0.80
870-875 s.g. 150-155 vis.	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70

Note: Above gasoline prices do not include inspection tax levied in some states

*Minimum delivered. **Delivered prices. †Lighterage 5c per bbl. additional

New York Export Market

(Lubricating oils are per gal. in bbls.)

	July 15	July 8	July 1
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	57.00	57.00 –59.00	57.00 –59.00
600 D filtered	45.00 –48.00	47.00 –49.00	47.00 –49.00
600 Warren E filtered	42.00 –43.00	44.00 –45.00	44.00 –45.00
600 s.r. unfiltered	35.00 –37.00	37.50 –40.00	38.00 –40.00
650 s.r. unfiltered	41.00 –43.00	45.00 –46.00	45.00 –46.00
600 flash, s.r.	44.00 –47.00	47.00 –48.00	47.00 –48.00
630 flash, s.r.	48.00 –49.00	52.00 –54.00	52.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00
200 vis. No. 6 color	15.00 –16.00	16.00 –18.00	16.00 –18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	18.00 –20.00	23.50	23.50
180 vis. No. 3¼ color	17.00	18.50 –20.50	18.50 –20.50
100 vis. No. 2¼ color	16.00	16.00 –17.00	16.00 –17.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	33.00	33.00	33.00
500 vis. No. 6½ color	31.00	31.00	31.00
400 vis. No. 7¼ color	30.00	30.00	30.00
300 vis. No. 6 color	23.00 –25.00	25.00 –27.00	25.00 –27.00
200 vis. No. 6 color	20.00 –22.00	24.00	24.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	2.75 – 3.00	2.75	2.75
124-126 A.m.p.	2.75 – 3.00	2.75	2.75
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	3.875	3.875	3.875– 4.125
125-127 A.m.p.	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
128-130 A.m.p.	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
130-132 A.m.p.	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
133-135 A.m.p.	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
135-137 A.m.p.	6.50	6.50	6.50
YELLOW CRUDE SCALE			
124-126 A.m.p.	2.625– 2.875	2.625	2.625

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

GASOLINE	July 15	July 8	July 1
U. S. Motor	8.50	8.50	8.50
60-62, 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.00	$2.00	$2.00
KEROSENE			
44 water white	8.00	8.00	8.00
41-43 prime white	7.00	7.00	7.00
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	4.00	4.00	4.00
*30 plus translucent gas oil	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
Grade C bunker oil	$0.95 –$1.00	$0.95 –$1.00	$0.95 –$1.00
Grade C bunker oil, cargoes	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.85

*Less than ½ of 1% sulphur.

MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
Grade C bunker oil for bunkering purposes, taxes paid	$0.95 –$1.00	$0.95 –$1.00	$0.95 –$1.00
SOUTH TEXAS LUBRICATING OILS, (Viscosity at 100° F. (cold test 0) (Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	7.00	7.00	7.00
200 vis. No. 3 unfiltered pale	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
300 vis. No. 3 unfiltered pale	9.50 –10.50	9.50 –10.50	9.50 –10.50
500 vis. No 3½ unfiltered pale	11.00 –12.00	11.00 –12.00	11.00 –12.00
750 vis. No. 4 unfiltered pale	13.50 –14.00	13.50 –14.00	13.50 –14.00
1200 vis. No. 5 unfiltered pale	16.50 –17.00	16.50 –17.00	16.50 –17.00
200 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300 vis. No. 5-6 red oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500 vis. No. 5-6 red oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750 vis. No. 5-6 red oil	12.00 –12.50	12.00 –12.50	12.00 –12.50
1200 vis. No. 5-6 red oil	16.50 –17.00	16.50 –17.00	16.50 –17.00

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	July 15	July 8	July 1
U. S. Motor gasoline	8.25 – 8.50	8.50 – 8.75	8.50 – 9.00
41-43 w.w. kerosene	7.00	7.00 – 7.125	7.00 – 7.125
*26-32 translucent gas oil	4.00	4.00	4.00

*Less than ½ of 1% sulfur.

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	July 15	July 8	July 1
Gasoline, U. S. Motor, 53-55 Gravity	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
Gasoline, U. S. Motor-blends and special cuts	7.50 –10.00	7.50 –10.00	7.50 –10.00
Gas Oil, 30-34, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Diesel Oil, 27 plus, per barrel	$0.875–$1.00	$0.875–$1.00	$0.875–$1.00
Bunker oil, 14-18, per barrel	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.75 – 6.25	5.75 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125, 150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

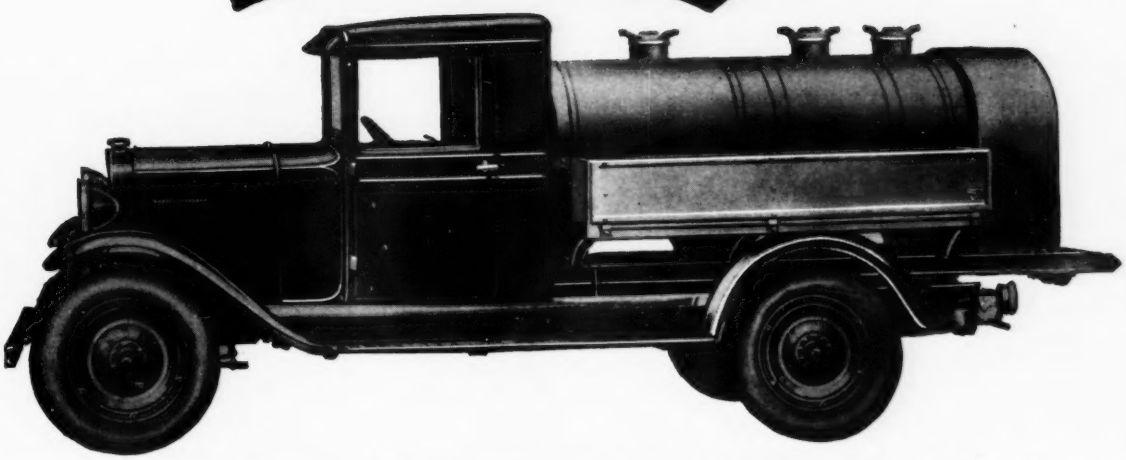
(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	July 15 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	35	38-40
Gulf to U. K. or Continental ports*	23	23-25
North Atlantic to U. K. or Continental ports*	20	21-23
Calif. to North Atlantic ports (not E. of N. Y.)	$1.00-$1.10	$1.07-$1.10
Gulf to North Atlantic ports (not E. of N. Y.)**	47-50	40-42

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading 1c per bbl. additional. For Tampico loading 5c per bbl. additional.

Leader



400-Gallon Steel-Mounted, Separable Compartment Truck Tank Mounted on 1929 Chevrolet Chassis

TRUCK TANKS

—*at last:* Permanent Beauty —Lasting Strength

ALL STEEL.—Wood has been done away with in Leader Truck Tanks. Not only the tank, but the entire mounting is built of steel. Steel alone can give the character, long life and beauty so characteristic of Leader Truck Tanks.

SEPARABLE COMPARTMENTS.—Each compartment is a separate, removable tank. This construction is fundamental. The life and service of the unit depends upon it.

GRIP NUTS and LOCK WASHERS.—One of the reasons that the Leader Truck Tanks remain tight and rigid lies in the fact that every single bolt is permanently locked in place with grip nuts or lock washers. Any driver of a Leader Truck Tank will tell you he never takes "time out" to tighten the bolts on his job.

LOW MAINTENANCE COST.—Because of its rigid steel construction the Leader Truck Tank requires little or no expense for up-keep. It is truly a Truck Tank that **will outlast** the chassis. **Write today** for Bulletin 505 which describes in detail the beautiful, rugged Leader All-Steel Truck Tank.

LEADER IRON WORKS

2112 NORTH JASPER STREET **DECATUR, ILLINOIS**

21 East 40th Street - New York, N. Y.

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect July 15, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N.J.	12	2	14	18	13
Newark, N. J.	14	2	16	20	13
Annapolis, Md.	14	4	18	22	13
Baltimore, Md.	14	4	18	22	12
Cumberland, Md.	14	4	18	22	13
Washington, D. C.	14	2	16	20	12
Danville, Va.	14	5	19	23	12
Norfolk, Va.	14	5	19	23	13
Richmond, Va.	14	5	19	23	13
Roanoke, Va.	13	5	18	21	13
Petersburg, Va.	14	5	19	23	13
Charleston, W. Va.	14	4	18	22	13
Keyser, W. Va.	14	4	18	22	13
Parkersburg, W. Va.	12	4	16	20	13
Wheeling, W. Va.	14	4	18	22	13
Charlotte, N. C.	14	5	19	23	13
Hickory, N. C.	14	5	19	23	13
Mt. Airy, N. C.	14	5	19	23	13
Salisbury, N. C.	14	5	19	23	13
Charleston, S. C.	14	6	20	24	13
Columbia, S. C.	14	6	20	24	13

CONTINENTAL OIL

Denver, Colo.	14	4	18	21	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	17	4	21	24	14
Cheyenne, Wyo.	18	4	22	25	15.5
Butte, Mont.	20.5	5	25.5	28.5	20
Helena, Mont.	20.5	5	25.5	28.5	20
Salt Lake City, Utah	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	28.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

Phoenix, Ariz.	14	4	18	22	21.5
Los Angeles, Cal.	16.5	3	19.5	22.5	15.5
Fresno, Cal.	17	3	20	23	16.5
San Francisco, Cal.	17	3	20	23	15.5
Reno, Nev.	21	4	25	28	19
Portland, Ore.	17.5	3	20.5	23.5	16.5
Seattle, Wash.	17.5	3	20.5	23.5	16.5
Spokane, Wash.	21.5	3	24.5	27.5	20.5
Tacoma, Wash.	17.5	3	20.5	23.5	16.5

Note: 3c per gal. discount to dealers off t.w. price thru S. O. California territory.

S. O. LOUISIANA

Little Rock, Ark.	15	5	20	24	13
Alexandria, La.	14	4	18	22	†16
Baton Rouge, La.	13	4	17	21	†14.5
Lake Charles, La.	††15.5	4	††19.5	††23.5	†16
New Orleans, La.	*14.5	4	*18.5	22.5	†16
Shreveport, La.	14.5	4	18.5	22.5	†15
Lafayette, La.	**15	4	**19	**23	†14
Bristol, Tenn.	17	5	22	25	14
Chattanooga, Tenn.	16.5	5	21.5	25.5	16
Knoxville, Tenn.	15	5	20	24	16
Nashville, Tenn.	14	5	19	23	16
Memphis, Tenn.	13	5	18	22	12.5

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	13	5	18	19	15.5
Catlettsburg, Ky.	13	5	18	19	15.5
Lexington, Ky.	16	5	21	23	15.5
Louisville, Ky.	16	5	21	23	15
Covington, Ky.	16	5	21	22	15.5
Clarksdale, Miss.	17	5	22	24	12.5
Gulfport, Miss.††	18.5	5	23.5	25.5	14
Jackson, Miss.	17	5	22	24	13
Natchez, Miss.	16.5	5	21.5	23.5	14
Vicksburg, Miss.	16.5	5	21.5	23.5	14
Birmingham, Ala.	18	4	22	24	16
Mobile, Ala.‡	18	4	22	24	15
Montgomery, Ala.*	19	4	23	25	16.5
Atlanta, Ga.	16	4	20	22	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	23	†15.5
Jacksonville, Fla.	17	6	23	25	14.5
Miama, Fla.	18	6	24	26	15.5
Tampa, Fla.	13	6	19	21	14.5
Pensacola, Fla.**	18	6	24	26	14.5

Note: Net price to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

Latest Changes in Tank Wagon Prices

Gasoline Changes

S. O. Ohio—T.w. up 2c, s.s. up 3c, Xenia, to statewide schedule of 20c and 21c respectively, **July 13.**

T.w. up 3c, s.s. 4c, Chillicothe, to statewide schedule of 20c and 21c, **July 5.**

S. O. Kentucky—T.w. and s.s. gasoline up 1c, thru Florida, covering tax increase of that amount to 6c, **July 1.**

T.w. and s.s. cut 4c, Tampa, to 19c and 21c respectively, **July 2.**

Magnolia Petroleum—T.w. and s.s. gasoline cut 1c, Tulsa, to 14c and 18c, respectively, including 4c tax, **July 9.**

T.w. and s.s. cut 1c, El Paso, to 15c and 19c respectively, including 2c tax, **July 11.**

T.w. and s.s. gasoline up 2c, thru Texas, covering tax increase to 4c, **July 16.** This 4c is not shown in the accompanying tank wagon table, as prices in the table are those in effect July 15.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. NEBRASKA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Omaha, Neb.	16.25	4	20.25	22.25	13.25
McCook	17.75	4	21.75	23.75	14.75
Norfolk	16.75	4	20.75	22.75	13.75
North Platte	17.75	4	21.75	23.75	14.50
Scottsbluff	17.75	4	21.75	23.75	14.25

S. O. INDIANA

Chicago, Ill.	16.0	0	16.0	17.0	13
Decatur, Ill.	16.2	0	16.2	17.2	13.1
E. St. Louis, Ill.	15.4	0	15.4	16.4	12.2
Joliet, Ill.	16.4	0	16.4	17.4	13.3
Peoria, Ill.	16.2	0	16.2	17.2	13.1
Quincy, Ill.	16.2	0	16.2	17.2	12.9
Indianapolis, Ind.	16.2	4	20.2	21.2	14.2
Evansville, Ind.	16	4	20	21	14
South Bend, Ind.	16.4	4	20.4	21.4	14.4
Detroit, Mich.	16.8	3	19.8	20.8	14.7
Grand Rapids, Mich.	16.7	3	19.7	20.7	14.6
Saginaw, Mich.	16.9	3	19.9	20.9	14.8
Green Bay, Wisc.	16.6	2	18.6	19.6	13.4
Madison, Wisc.	16.3	2	18.3	19.3	13.1
Milwaukee, Wisc.	16.1	2	18.1	19.1	12.9
La Crosse, Wisc.	17.2	2	19.2	20.2	14
Minneapolis, Minn.	17.2	3	20.2	21.2	13.9
Duluth, Minn.	17.5	3	20.5	21.5	13.9
Mankato, Minn.	17.1	3	20.1	21.1	13.7
Des Moines, Ia.	16.5	3	19.5	20.5	13.3
Davenport, Ia.	16.5	3	19.5	20.5	13.3
Sioux City, Ia.	16.1	3	19.1	20.1	12.9
Mason City, Ia.	16.5	3	19.5	20.5	13.3
St. Louis, Mo.	*15.9	2	17.9	18.9	12.3
Kansas City, Mo.	†16.9	2	18.9	19.9	11.6
St. Joseph, Mo.	†16.5	2	18.5	19.5	12.2
Fargo, N. D.	18.9	3	21.9	22.9	15.9
Grand Forks, N. D.	19.2	3	22.2	23.2	16.2
Minot, N. D.	18.9	3	21.9	22.9	15.9
Pierre, S. D.	17	4	21	22	14.4
Huron, S. D.	17.3	4	21.3	22.3	14.7
Wichita, Kans.	14.8	3	17.8	18.8	11.8
Bartlesville, Okla.	14.5	3	17.5	18.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Bryan	*13	4	*17	17	14
Lima and Hamilton	**14	4	**18	18	14
††10 Competitive Points	††15	4	††19	19	14
†At 6 Competitive Points	*15	4	*19	20	14
Elsewhere in Ohio	*16	4	*20	21	14

†These 6 points are: Marion, Hicksville, Celina, Arlington, Mortimer and Nevada, O.

*Dealers and commercial accounts get 2c per gal. off t.w. price.

††These 10 points are: Findlay, Arcadia, Perrysburg, Fostoria, Wapakoneta, Urbana, Jamestown, St. Paris, Ada and Piqua. Discount to dealers is 3c per gal. off t.w. price.

**Discount to dealers and commercial consumers is 3c per gal. off t.w. price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	13	4	17	20	13
Oklahoma City	13	4	17	20	10
Tulsa, Okla.	10	4	14	18	10
Fort Smith, Ark.†	12	†4	16	20	12
Little Rock, Ark.	15	5	20	24	13
Texarkana, Ark.*	13	2	15	19	13
Dallas, Tex.	13	2	15	19	13
Fort Worth, Tex.	13	2	15	18	12
Houston, Tex.	13	2	15	19	13
San Antonio, Tex.	13	2	15	19	11
El Paso, Tex.	13	2	15	19	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	2	19	*21	15
Albany, N. Y.	15	2	17	19	15
Buffalo, N. Y.	15	2	17	19	14
Rochester, N. Y.	15	2	17	19	13
Syracuse, N. Y.	15	2	17	19	12
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	22	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	13

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

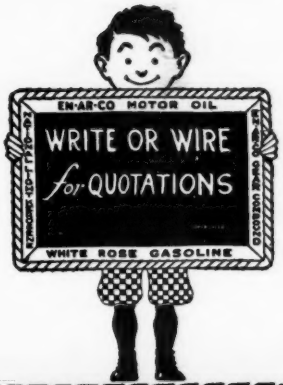
ATLANTIC REFINING

Pittsburgh, Pa.	17	*	17	23	14
Philadelphia, Pa.	17	*	17	23	14
Allentown, Pa.	17	*	17	23	14
Erie, Pa.	13	*	13	19	14
Scranton, Pa.	17	*	17	23	14
Altoona, Pa.	17	*	17	23	14
Williamsport, Pa.	16	*	16	20	14

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1,40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Georgia, 1/10c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/50c to ½c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only, per gallon; Iowa, 7/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above state or other states there are local inspection fees.



En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

IS YOUR FUEL OIL BUSINESS PROFITABLE?

I CAN help you make it pay you good profits and put you in position to greatly increase your business.

I have done this for myself and others. I know the retail fuel oil market from the buying of the oil to the servicing of the customer.

The time for action is now. If you are just planning to go into the business, let me help you get started.

W. A. Dalton
Retail Fuel Oil Consultant
1000 Madison St.
Gary, Ind.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect July 15, 1929

ATLANTIC REFINING

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Dover, Del.	17	3	20	22	14
Wilmington, Del.	17	3	20	22	14
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	15	2	17	18	15
Fall River, Mass.	14	2	16	17	15
Providence, R. I.	14	2	16	17	15
Hartford, Conn.	16	2	18	20	14
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	16	2	18	20	13
Camden, N. J.	16	2	18	20	13
Trenton, N. J.	16	2	18	20	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	16	4	20	22	13
Hagerstown, Md.	16	4	20	22	13
Richmond Va.	16	5	21	23	13
Wilmington, N. C.	16	5	21	23	13
Brunswick, Ga.	17	4	21	23	**16.5
Jacksonville, Fla.	17	5	22	24	14.5

Note: 2c per gal. discount off t.w. price to dealers thru territory; also 2c off to commercial accounts under contract for one year.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	15.7	17.2	19
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	*19.7	*21.2	*23
St. Louis	15.6	17.1	18.9
New York		17	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.

Petroleum Spirits

	(Solvent)
Tank Cars	
New York refineries	12.00
Philadelphia refineries	12.00
Tank Wagon or Steel Barrels	
New York City	17
New England	19
New Jersey	16
Pennsylvania	16-18

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	20.5	5	25.5	29	21
Ottawa	14.5	5	19.5	23	21
Cochrane	25.5	5	30.5		26
Ft. William	23.5	5	28.5	32	23.5
MANITOBA					
Winnipeg	22.5	3	25.5	29	22.5
SASKATCHEWAN					
Regina	27	3	30	34	27
ALBERTA					
Edmonton	28.5	5	33.5	37	28.5
Calgary	24.5	5	29.5	33	24.5
BRITISH COLUMBIA					
Vancouver	23	3	26	30	24
QUEBEC					
Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	25	5	30	34	25
Moncton	25	5	30	34	25
NOVA SCOTIA					
Halifax	25	5	30	34	25
Sydney	25	5	30	34	25
PRINCE EDWARD ISLAND					
Charlottetown	25	5	30	34	25

Note: In districts surrounding these points 1c additional is added to city price.

"Fill 'er Up"

—Says the Owner of a Coupon Book

The owner of a coupon book does not shop for five gallons here and a quart of oil there—he buys all his gas and oil from the same stations—YOUR stations—where his coupons are good as cash. It's easy to sell coupon books and you get the profit on ten dollars instead of on one sale. Write today for the new catalog of accurately printed Allison Coupon Books.

Allison Coupon Co.
Indianapolis, Ind.
Accuracy Since 1888

ACCURACY

Regardless of how much or how little gasoline or oil passes through a Niagara meter, it accurately registers and records, preventing loss, theft or favoritism.

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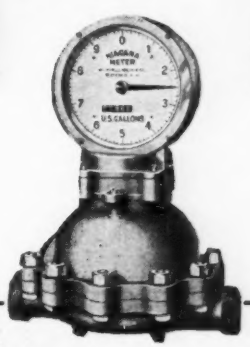
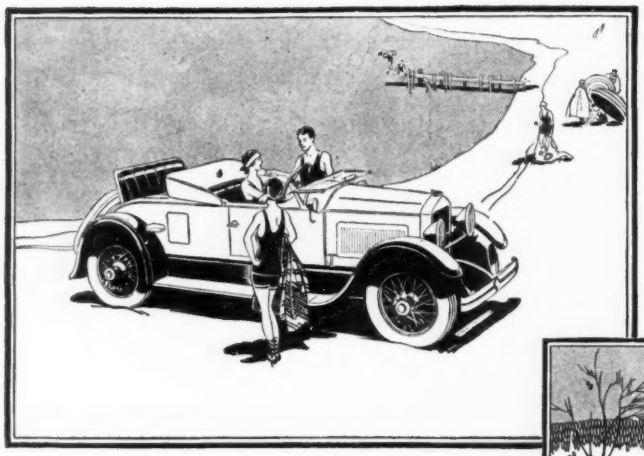


BUFFALO METER COMPANY
2889 Main St., Buffalo, N. Y.



FREEZING COLD

and gears shift after a struggle—or easily and smoothly with Graigrene! Graigrene never freezes up, never channels out—it flows freely all the time—gives full protection the whole year through.

GLARING SUNSHINE

means heat. Heat means you need that thin, tough protective film of oil between all metal surfaces that Graigrene supplies all the time. Sluggishness is unknown. You're sure of protection with Graigrene.

Rain or Shine ...or Snow...

GRAIGRENE

[PRONOUNCED GREY-GREEN]

... gives perfect lubrication for transmission and differential

COLD TEST		POUR TEST	VISCOSITY AT 210°
000	60° below zero	30° to 35° below zero	272 seconds
00	30° below zero	zero	467 seconds
0	zero cold test		825 seconds
1	Summer		1800 seconds
2	Summer		2500 seconds

There is a grade of Graigrene for every car and every purpose

Manufactured by

Viscosity Oil Company

Established 1894

W. D. SIMMONS, President

Central Manufacturing District, CHICAGO

Phone Yards 7196

Crude Oil Prices (in Effect July 15, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District) *$4.05
Bradford District Oil in National Transit Lines (Bradford District) *4.05
Penna. Grade Oil in National Transit Lines (Other Pennsylvania) *4.05
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) 4.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) 3.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district) 3.85
Cabell Grade in Eureka Pipe Lines (West Virginia) 1.65
Corning Grade in Buckeye Pipe Lines (Ohio) 1.90
Corning, O., heavy grade 1.80
Somerset Oil in Cumberland Pipe Lines (Kentucky) 1.80
Ragland Grade in Cumberland Pipe Lines (Kentucky) $0.60

*Oil run prior to July 1, 1929 is $4.00 per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines $1.80

MICHIGAN

(Posted by Dixie Oil Co.)

Dundee (Muskegon) $1.10

Traverse (Muskegon):

32-32.9	$1.25	37-37.9	$1.50
33-33.9	1.30	38-38.9	1.55
34-34.9	1.35	39-39.9	1.60
35-35.9	1.40	40-40.9	1.65
36-36.9	1.45	41-41.9	1.70

(Posted by Pure Oil Co.)

Midland, Midland County $1.70

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.
Effective May 21, 1929

Wooster	$1.90	Princeton	$1.75
Lima	1.80	Illinois	1.75
Waterloo	1.20	Plymouth	1.28
Indiana	1.57	West Kentucky	1.83

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia $2.20
Oil Springs 2.27

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.
(In Oklahoma, Kansas, North and East Central Texas)
Effective May 20, 1929

Below 25	$0.85	35-35.9	$1.40
25-25.9	0.90	36-36.9	1.45
26-26.9	0.95	37-37.9	1.50
27-27.9	1.00	38-38.9	1.55
28-28.9	1.05	39-39.9	1.60
29-29.9	1.10	40-40.9	1.65
30-30.9	1.15	41-41.9	1.70
31-31.9	1.20	42-42.9	1.75
32-32.9	1.25	43-43.9	1.80
33-33.9	1.30	44 and above	1.85
34-34.9	1.35		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

May 20, 1929, same schedule as Prairie in above fields.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

May 20, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.70	29-29.9	$0.95
26-26.9	0.75	30-30.9	1.05
27-27.9	0.85	31-31.9	1.15
28-28.9	0.90		

May 20, 1929, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in West Texas which see:

Iatan district $0.93
Corsicana heavy 0.80
Luling 0.90
Mirando 0.90

Carter Oil Co.

(Oklahoma and Kansas)

May 20, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.
Effective May 20, 1929

Hutchinson and Carson Counties:

Below 32	$0.90	38-38.9	$1.25
32-32.9	0.95	39-39.9	1.30
33-33.9	1.00	40-40.9	1.35
34-34.9	1.05	41-41.9	1.40
35-35.9	1.10	42-42.9	1.45
36-36.9	1.15	43-43.9	1.50
37-37.9	1.20	44 and above	1.55

Wheeler County:

Below 30	$0.90	37-37.9	$1.30
30-30.9	0.95	38-38.9	1.35
31-31.9	1.00	39-39.9	1.40
32-32.9	1.05	40-40.9	1.45
33-33.9	1.10	41-41.9	1.50
34-34.9	1.15	42-42.9	1.55
35-35.9	1.20	43-43.9	1.60
36-36.9	1.25	44 and above	1.65

Gray County:

Below 29	$0.90	37-37.9	$1.35
29-29.9	0.95	38-38.9	1.40
30-30.9	1.00	39-39.9	1.45
31-31.9	1.05	40-40.9	1.50
32-32.9	1.10	41-41.9	1.55
33-33.9	1.15	42-42.9	1.60
34-34.9	1.20	43-43.9	1.65
35-35.9	1.25	44 and above	1.70
36-36.9	1.30		

Above prices met by The Texas Co. and Magnolia on May 20.

WEST TEXAS

Humble Oil & Refining Co.
Effective May 20, 1929

Winkler, Crane, Upton, Crockett, Howard and Pecos Counties, also Lea County, N. Mex.:

Below 25	$0.70	25-25.9	$0.74
26-26.9	0.78	32-32.9	$1.02
27-27.9	0.82	33-33.9	1.06
28-28.9	0.86	34-34.9	1.10
29-29.9	0.90	35-35.9	1.14
30-30.9	0.94	36 and above	1.18
31-31.9	0.98		

May 20, 1929, The Texas Co. posted same prices as Humble in Crane, Upton, Pecos and Winkler., and Magnolia in Crane, Upton, Winkler, Glasscock, Howard and Mitchell.

SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)
Effective May 20, 1929

Mirando $0.90
Salt Flat 1.25

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado Crichton, De Soto and **Cotton Valley.
Effective May 22, 1929

Below 28	$1.00	36-36.9	$1.45
28-28.9	1.05	37-37.9	1.50
29-29.9	1.10	38-38.9	1.55
30-30.9	1.15	39-39.9	1.60
31-31.9	1.20	40-40.9	1.65
32-32.9	1.25	41-41.9	1.70
33-33.9	1.30	42-42.9	1.75
34-34.9	1.35	43-43.9	1.80
35-35.9	1.40	44 and above	1.85

**Cotton Valley, below 36, $0.85. Beginning with 36-36.9, same schedule as above.

Smackover, below 24 ..... $0.85
do 24 and above 1.00
Bellevue 1.30
*Urania, La 1.10
†East El Dorado 0.75

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

May 20, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.85; 25-25.9, $0.90; 26-26.9, $0.95; 27-27.9, $1.00.

May 22, Magnolia, Atlantic, Shreveport-Eldorado Pipe Line, Louisiana Oil, and Gulf Companies met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.
Effective May 22, 1929

Below 28	$0.90	30-30.9	$1.02
28-28.9	0.94	31-31.9	1.06
29-29.9	0.98	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.
Effective May 20, 1929

Grades A	$1.30	29-29.9	$1.30
Grades B:		30-30.9	1.33
Below 25	$1.15	31-31.9	1.36
25-25.9	1.18	32-32.9	1.39
26-26.9	1.21	33-33.9	1.42
27-27.9	1.24	34-34.9	1.45
28-28.9	1.27	35 and above	1.48

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Stocks McDonald Equipment

CLEVELAND, July 13.—The Amco Sales Corp., 233 So. Eighth St., Philadelphia, has installed a complete stock of McDonald oil handling equipment as manufactured by the A. Y. McDonald Mfg. Co. C. R. Gates, manager, announces that the new arrangement will permit overnight shipment to points in the Philadelphia trade district or immediate pick-up from stock for jobbers within motoring distance.

KANSAS CITY—The fourth annual Big-Four state jobbers convention will be held Oct. 15, 16 and 17 at Kansas City, according to George S. Allee, secretary of the Missouri Oil Men's Association here.

CLEVELAND, July 13.—The question of constructing a gasoline pipe line from Baicoi to Contantza, Roumania, is being considered again. The project was projected first in 1927.

Gas Tax Limit Is Subject For Conference

CLEVELAND, July 12.—"Is the gasoline tax starting to commit suicide?" is one subject proposed for discussion at the coming North American Tax Conference at Detroit, Aug. 7, 8 and 9.

W. S. Booton, head of tax collection in Tennessee, proposes the question, now that two states have a six-cent tax; and, with the new Illinois tax going into effect Aug. 1, every state will have a gasoline tax of some amount.

"The gasoline tax is the giant tax of history, and it will swell up and 'bust wide open' within three years after it becomes unpopular," he said in proposing this subject for discussion to W. A. McAtee, chief oil inspector for Missouri, president of the tax conference. "If the gasoline tax is to last it must be a popular tax."

The tentative program for the conference calls for an address by Dr. Gustav Egloff, of the Universal Oil Products Co., on "The Gasoline of the Future."

Frank E. Packard, Chicago, general counsel for the Standard Oil Co. of Indiana, will talk on "The Inevitable in Gas Tax Tendencies."

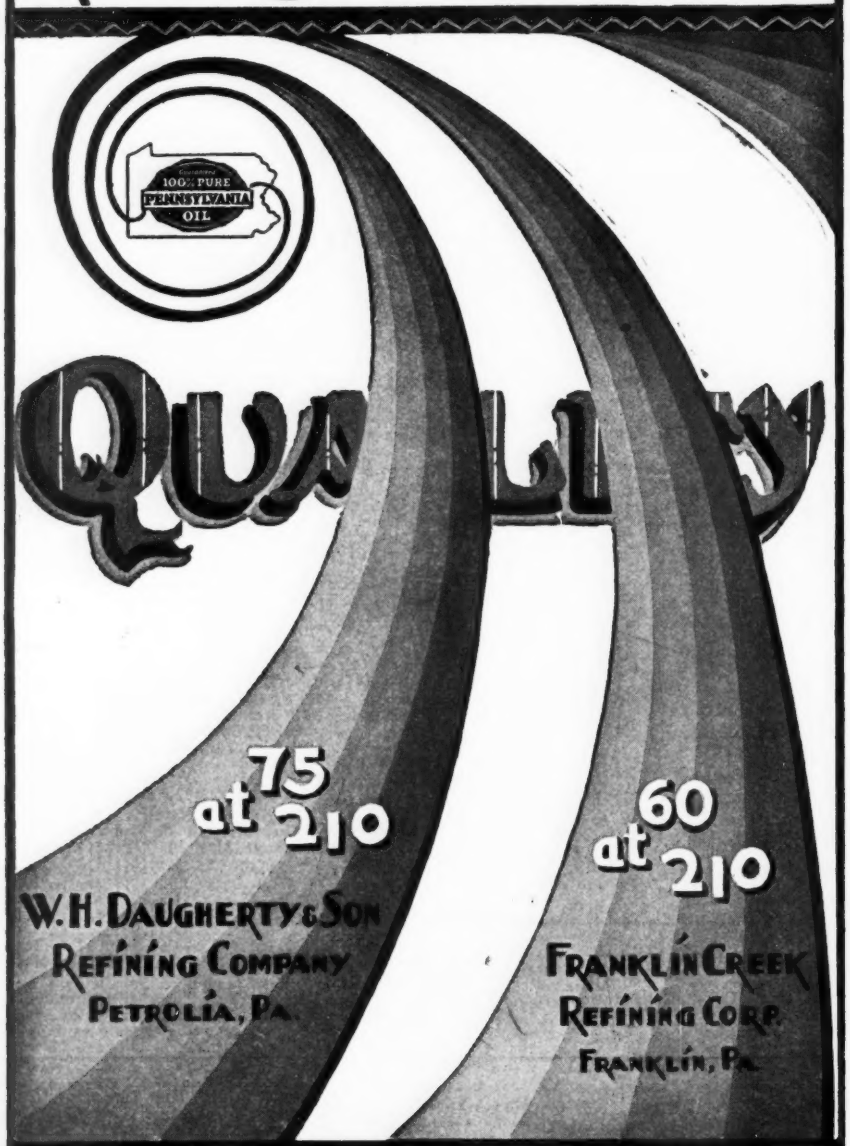
Mr. Booton will discuss federal exemptions from payment of the state gas tax.

James Duce, veteran oil inspector of Colorado, will present the history and importance of oil inspection.

Hjalmar Nilsson, another veteran state inspector from Minnesota, will talk on the need for inspection of lubricating oils.

Burton F. Browne, of Lansing, Mich., is chairman of the Conference Council.

REFINING SCIENCE MODERNIZED



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Trucks

and trailers—their operation and maintenance—how they lower oil transportation costs— 26 articles have been devoted exclusively to truck operation in the oil industry in past 21 months' issues of National Petroleum News. They are listed here for your file reference:

1929

Competitive truck-trailer tests conducted in Pennsylvania hills July 3, p. 31
N. Y. approves Smith-Hamburg-Scott truck tank June 19, p. 108
Keeps warm oil to save truck time June 12, p. 108
Tests of hill climbing of loaded trucks May 15, p. 93
Two small trailers deliver 6986 gals. a day May 1, p. 40-h
Light truck tractors for oil given hard road tests Apr. 24, p. 32
Trucks 1,000,000 gals. gasoline per month from 1 bulk station March 20, p. 114
Trucks speeding cause accidents Jan. 30, p. 45

1928

Tank truck possibilities revealed Dec. 5, p. 125
Economical truck operation thru cost accounting Dec. 5, p. 129
N. Y. tank truck monopoly causes suit Dec. 5, p. 23
Tank Trucks for town and country Oct. 17, p. 195
Truck tank monopoly in New York Oct. 10, p. 24
Truck trains transport gasoline cheaper Oct. 10, p. 68
Truck and water transportation exceed rail Sept. 26, p. 94
N. Y. truck tank prices caused by politics July 4, p. 23
Fast truck features power unloader July 4, p. 63
Trucks cut gasoline transportation costs June 27, p. 69
Truck hauling permitted in most states Apr. 18, p. 27
Truck shipping is new era for oil transportation Apr. 11, p. 28; Apr. 4, p. 25; Mar. 28, p. 28; Mar. 14, p. 27

1927

Developing driver for cheaper transportation Dec. 14, p. 70
Truck trailers haul carload of gasoline Nov. 23, p. 26
Lowering transportation costs with trucks Oct. 26, p. 27

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National Petroleum News

Main Office: 1213 West Third St.
Cleveland, Ohio

Crude Oil Prices (in Effect July 15, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective May 20, 1929

Grades A	$1.30	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.49	40-40.9	$1.69
36-36.9	1.53	41-41.9	1.73
37-37.9	1.57	42-42.9	1.77
38-38.9	1.61	43-43.9	1.81
39-39.9	1.65	44 and above	1.85

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective May 20, 1929)

‡Salt Creek 29-29.9	$1.10
" " 30-30.9	1.15
" " 31-31.9	1.20
" " 32-32.9	1.25
" " 33-33.9	1.30
" " 34-34.9	1.35
" " 35-35.9	1.40
" " 36-36.9	1.45
" " 37 and above	1.50
Elk Basin	1.65
Grass Creek light	1.65
Big Muddy	$1.43
Lance Creek	1.68
Rock Creek	1.40
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.65
‡Cat Creek, Mont	1.65
Sunburst, Mont	1.75
‡Hogback, N. Mex	1.70
Artesia, N. Mex	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick †Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14-14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15-15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16-16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17-17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18-18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19-19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20-20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21-21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22-22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23-23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25-25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26-26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27-27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29-29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30-30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31-31.9	1.30	....	....	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33-33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	1.40	1.22	....	....	....	....	1.34
34-34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35-35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	....	1.30	....	....	....	....	....
36-36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	July 15	July 8
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.50-4.50	$3.50-4.50
Liquid Chlorine, tank cars, wks, lb.	3.50–5.00	3.50–5.00

Compounders' Supplies

	July 15	July 8
Vegetable Oils		
Linseed carloads, spot, lb.	11.20	11.20
Tanks, spot	10.40	10.40
Soya Bean, Tanks, coast, lb.	9.00	9.00
Oleic Acid		
Distilled, tanks, lb.	9.50	9.25
Distilled, bbls, lb.	10.375	10.375
Saponified, tanks, lb.	9.75	9.50
Saponified, bbls, lb.	10.625	10.625
Lard Oils		
Prime Winter Strained, lb.	15.00	15.00
Extra Winter Strained, lb.	13.00	13.00
Extra, lb.	12.625	12.265
Extra No. 1, lb.	12.00	12.00
No. 1, lb.	11.75	11.75
No. 2, lb.	11.50	11.50
Tallow oil, lb.	10.75	10.75
Neatsfoot Oil		
Pure, bbls, lb.	13.50	13.50
Extra, bbls, lb.	12.25	12.25
No. 1 bbls, lb.	12.00	12.00
Cold Pressed, lb.	13.75	13.75
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	72	71
Light Pressed, tank cars, N.Y. gal	62	67
White bleached, gal.	78	77
Yellow bleached, gal.	75	65
Whale, extra winter bleached, gal.	84	80
Naval Stores		
Steam distilled turpentine, N. Y., gal.	51	51
Steam distilled turpentine, Savannah, gal.	45	46
Gum turpentine, N. Y., gal.	50	54.00
Gum turpentine, f.o.b. cars Savannah, gal.	48	50
Wood Rosin F, N. Y., bbl.	$7.30	$7.30
Wood Rosin F, Savn'h, bbl.	$6.50	$6.50
Gum Rosin B, N. Y., bbl.	$8.60	$7.50
Gum Rosin B, f.o.b. cars Savannah, bbl.	$7.75	$6.80
Rosin oil, pure, gal.	61	61
Rosin oil, compounded, gal.	50	50
Pine Tar		
Kiln burnt, bbl.	$13.00–14.00	$13.00–14.00
Retort, bbl.	$13.50–14.50	$13.50–14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	57–64	57–64

OIL STOCKS AND FINANCES

National Petroleum News

Superior Oil Recapitalization To Cut Stock Two-Thirds

NEW YORK, July 13

DIRECTORS of the Superior Oil Corp. will submit to stockholders at a special meeting July 31 a plan to reduce the capital stock to one-third.

It is the plan to reduce the capital stock from 2,500,000 to 2,400,000 shares and to issue one new share for each three shares of present outstanding stock. On June 30 the company had outstanding 2,330,938 no par shares.

E. R. Perry, chairman, is quoted in a dispatch from Tulsa as follows:

"The recapitalization plan will allow a more flexible corporate structure for carrying out the program of expansion undertaken late in 1928.

"During the past 12 months the corporation has pursued a policy of expansion, with favorable results as shown in the operations for the first six months of 1929. It is the policy of the directors to continue this program aggressively.

"In order to facilitate this development the board has deemed it expedient to change the capital structure, which will involve an amendment to the charter, changing the present 2,500,000 shares of no-par value to 2,400,000 shares of no-par value and the exchange of one share of new stock for three shares of the present stock. Upon completion of this exchange there will be 776,979 shares of new stock outstanding, leaving 1,623,021 shares unissued in the treasury.

"Production of Superior Oil Corp. for the first six months of 1929 was 1,287,560 barrels, compared with 498,414 barrels in the corresponding six months of 1928. The corporation is drilling at the present time more than 20 wells in Oklahoma and Texas. Two wells were completed as producers within the past few days.

"The policy of Superior for several years as regards depreciation, depletion, etc., has been liberal. In the second quarter of 1929 deductions on account of depreciation, depletion, expired leases, etc., amounted to $693,590 and in the first quarter to $541,475, a total of $1,235,000 for six months of this year as compared with $704,863 in the corresponding six months of 1928."

Rumors Link Tidewater And Continental

CLEVELAND, July 13.—Rumors of mergers centering about the new Continental Oil Co. have been current in New York and Pittsburgh the last few days.

According to one rumor there is to be a consolidation of the Continental which was formed by the merging of Marland Oil Co. with Continental Oil Co. of Maine, headquarters in Denver, and the Tide Water Associated Oil Co. which operates on the East Coast, in the Mid-Continent and on the Pacific Coast.

Another rumor was that Continental would acquire Plymouth Oil Co. which has producing properties in West Texas.

The rumors were termed interesting but neither denial or confirmation that negotiations were pending were obtained.

Consolidation of Continental and the Tide Water Associated would give such a company virtually a nation-wide set-up.

Phillips to Enlarge Texas Refinery

BARTLESVILLE, July 13.—Phillips Petroleum Co. will increase the capacity of its refinery at Borger, in the Texas Panhandle, from 10,000 to 15,000 barrels per day. Work of installing the additional equipment will begin at once. Increases in water lines and other auxiliaries will be necessary to care for the larger capacity.

Recently the company announced that it will build a refinery at Wichita, Kan., to take care of the growing demands of its customers and stations.

Phillips now has 360 company owned service stations in its marketing territory from Minneapolis to the Panhandle of Texas and from St. Louis to Denver. The company also sells its "Sixty-six" gasoline to the jobbing trade. The product is a motor fuel varying in specification depending on the season of the year and the altitude and general climatic conditions in the territory where it is to be consumed.

Swan-Finch Oil Offers Preferred Stock

CLEVELAND, July 13.—Swan-Finch Oil Corp. has offered common stockholders right to subscribe for one share of 7 per cent preferred stock at par, $25, for each three shares of common stock held June 25. Subscription rights expire Aug. 10.

Each share of preferred stock carries a warrant entitling the holder to subscribe to one share of common stock at $25 on or before Aug. 1, 1932.

Swan-Finch Oil Corp. is one of the Standard Oil group and for years was engaged only in the compounding of lubricating oils and greases. Several years ago it bought two gasoline and motor oil marketing companies in Buffalo and has been expanding in western New York state.

Last year the company bought the refinery of the Seneca Oil Works at Warren, Pa., which is now being operated by the Swan-Finch Refining Co.

The preferred stock issue is to reimburse the company for recent capital expenditures.

Beaty Formally Elected To Transcontinental

TULSA, July 13.—Approval of the selection of Amos L. Beaty of New York as chairman of the board of directors of the Transcontinental Oil Co. was made at a meeting of the stockholders in the company's offices here July 12. Mr. Beaty succeeds C. H. Huston.

A proposal to retire the preferred stock and accumulated dividends was adopted unanimously. The holders of the 157,500 7 per cent preferred shares, par value $100 a share, will receive $135 a share for their stock and accruals, or $90 a share, and five shares of common stock.

Holders of 3,758,699 no par common shares outstanding also were allowed to subscribe for one additional share of common at $9 for each two shares held July 23.

New York's May Tax is $1,388,610

NEW YORK, July 13.—Gasoline tax collections for May in New York state amounted to $1,388,610.73. May is the first whole month since the New York tax went into effect for which figures are available.

Imperial Tractor Fuels

We have several grades of fuels especially refined for tractor service. Of these we are recommending certain grades of equivalent service but at lower prices.

Modern tractors must be given the same consideration as the automobile to obtain the desired dependable and efficient operation. Imperial grades will give you this better service. Let us quote you on Imperial Tractor Fuel, which we highly recommend for tractor service.

Imperial Tractor Fuels

42-44 Kerosene
41-43 Kerosene
38-40 Tractor Fuel
38-40 Distillate

We Recommend

Imperial
TRACTOR FUEL
SPECIFICATIONS

Gravity	38-40 A. P. I.
I. P. above	200° F
20% under	428° F
90% under	527° F
E. P. under	572° F
FLASH BELOW	100° F

Imperial Refineries

Imperial Refining Co. **San Angelo Refining Co.**
Kettle Creek Refining Co. **Wickett Refining Co.**

General Offices
TULSA, OKLAHOMA

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended July 13 Sales	First	High	Low	Last	Change
43 7/8	27 1/8	42 5/8	22 1/2	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 29	21,000	32	33	31 1/2	32 3/8	+ 3/4
85	51 1/4	64 3/4	43 1/8	(sh) 209,180	N.P.	American Republics Corp.	....	.....	2,400	45 1/2	46	45	45	— 1/8
53 3/4	37 1/2	47 1/4	40	$56,000,000	$25	Associated Oil.	50cQ	June 30, 29	560	44	44 1/2	44	44 1/2	+ 1/2
62 1/2	50	77 5/8	53 1/2	50,000,000	25	Atlantic Refining.	‡25cQ	June 15, 29	284,000	77 3/4	*77 5/8	68 1/4	68 7/8	— 8 1/2
118 1/4	114 1/2	117 5/8	114	20,000,000	100	do pfd.	$1.75Q	May 1, 29	.....	.....	.....	.....	.....	.....
53	20	49 1/8	38 1/8	47,261,125	25	Barnsdall Corp. A.	50cQ	May 6, 29	29,100	41 1/2	41 5/8	40	40	— 1 1/4
51 1/8	20	49	38 1/8	300,525	25	do B.	50cQ	May 6, 29	.....	.....	.....	.....	.....	.....
24 1/2	12 1/4	29 1/2	20	$56,075	N.P.	Beacon Oil.	....	.....	9,900	28 3/8	28 3/8	27 1/2	27 1/2	— 1/2
36	25 1/4	30	25	$51,524,150	$25	California Petroleum.	....	Jan. 1, 29	30	27	27	27	27	— 1/2
....	....	35 7/8	33 1/2	4,634,163	N.P.	Continental Oil (Delaware).	....	.....	21,600	35	*35 7/8	†33 1/2	34 1/2	0
94 7/8	68	87 3/8	63	21,031,400	100	General Asphalt.	....	.....	21,700	85 1/4	86 5/8	82 7/8	86 5/8	+ 2 1/8
141	110 1/8	131	104 1/2	6,628,200	100	do pfd.	$1.25Q	June 1, 29	120	127 1/2	130	127	129 1/2	+ 4 1/2
167	79	107	70 1/2	25,000,000	100	Houston Oil.	....	.....	4,400	82 1/2	82 1/2	76 1/8	78	— 4 3/8
38 3/8	21 3/4	39 1/4	30	(sh) 1,333,157	N.P.	Independent Oil & Gas.	50cQ	Apr. 30, 29	11,700	34 3/8	34 7/8	34 1/4	34 7/8	0
39 5/8	9	52 5/8	29	$4,299,190	$10	Indian Refining.	....	Dec. 15, 20	22,500	44 7/8	45 1/4	42 1/8	42 5/8	— 1 7/8
37 1/4	8 1/2	48 3/4	28	4,550,110	10	do ctfs.	....	.....	10,900	42 1/4	42 7/8	41	41 3/4	— 3/8
185	140	165	160	1,977,700	100	do pfd. new.	$1.75Q	July 1, 29	.....	.....	.....	.....	.....	.....
39 1/8	27 3/8	38 3/8	26	3,992,387	N.P.	Lago Oil & Transport.	....	May 2, 27	4,700	33 7/8	35 3/8	32 1/2	34 1/4	+ 3/8
19 3/4	9 3/8	18	12 1/8	(sh) 1,187,298	N.P.	Louisiana Oil Refining.	....	.....	8,700	12 1/2	12 3/4	†12 1/8	12 1/8	— 1/2
96	78	100	89	$4,000,000	$100	do pfd.	$1.62 1/2	May 15, 29	330	92	92	92	92	0
25 1/2	12 1/2	18 1/2	12	(sh) 330,000	N.P.	Maracaibo Oil.	....	.....	300	13 1/2	13 1/2	13 3/8	13 3/8	— 1
4 9/32	33	47 1/8	33 1/8	(sh) 2,316,897	N.P.	Marland Oil Co.	....	Mar. 31, 27	.....	.....	.....	.....	.....	.....
360	250	295	205	$45,942,800	$100	Mexican Petroleum.	$3Q	July 20, 29	10	212	212	212	212	—16
....	....	....	....	12,000,000	100	do pfd.	$2Q	July 20, 29	.....	.....	.....	.....	.....	.....
73	4 5/8	69 3/8	36 1/4	(sh) 995,500	N.P.	Mexican Seaboard.	....	Nov. 15, 24	32,200	50	50	45	46	— 4
44 1/2	25 1/8	39 7/8	30 1/2	(sh) 1,857,461	N.P.	Mid-Continent.	50cQ	May 15, 29	11,500	33 7/8	33 7/8	33 1/8	33 1/2	— 1/8
120 1/2	103 1/4	121	120 1/4	$6,718,000	$100	do pfd.	$1.75Q	June 1, 29	.....	.....	.....	.....	.....	.....
7 3/8	2 3/8	5 1/8	3 1/2	23,849,720	10	Middle States.	....	July 1, 23	4,000	3 3/4	4	3 1/2	3 1/2	— 1/4
5 7/8	1 1/2	3 1/2	2 1/4	5,950,500	10	do ctfs.	....	.....	2,500	2 3/4	2 7/8	2 1/2	2 1/2	— 3/8
2 1/4	1	1 1/2	1	(sh) 3,500,000	N.P.	Pacific Oil.	....	.....	10,900	1	1	1	1	0
55 1/2	38 1/4	63	41 1/8	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	3,500	54 1/2	57	54	56 1/8	+ 1 5/8
58 7/8	37 3/4	66 3/4	40 1/2	121,101,400	50	do B.	....	Oct. 20, 27	138,500	57 1/4	61 1/4	56 1/8	60 1/4	+ 3
28 3/8	15 1/2	17 1/2	13 3/4	(sh) 400,000	N.P.	Pan American Western B.	....	Jan. 30, 27	200	14 1/8	14 1/8	14	14	0
21 3/4	11 1/2	15 1/4	9 1/2	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	1,100	9 3/4	9 3/4	9 1/2	9 1/2	— 1/8
106 3/4	70	76	47 1/2	$2,935,200	$100	do pfd.	....	July 2, 23	100	55	55	55	55	— 5
53 7/8	35 1/4	47	36 3/8	(sh) 2,406,803	N.P.	Phillips Petroleum.	37 1/2cQ	July 1, 29	12,900	38 3/8	38 3/8	†36 3/8	36 3/4	— 1 1/8
5 1/4	1/2	3 3/8	2	$29,622,925	$25	Pierce Oil.	....	.....	3,900	2	2 1/8	2	2 1/8	+ 1/8
50	16 1/4	51 1/2	30	15,000,000	100	do pfd.	....	Feb. 1, 22	700	39 3/4	40	39	39 1/4	— 3/4
6 5/8	3 1/2	5 7/8	4 1/8	(sh) 2,500,000	N.P.	Pierce Petroleum.	....	.....	5,400	4 1/8	4 3/8	†4 1/8	4 1/8	0
64 5/8	59 1/2	65 5/8	54 1/8	$60,636,450	$25	Prairie Oil & Gas.	....	Aug. 31, 27	8,400	55 7/8	56	†54 1/8	54 1/8	— 1
....	....	61 7/8	53 5/8	101,250,000	25	Prairie Pipe Line.	‡75cQ	June 30, 29	13,400	60	60 1/2	59 1/2	60 1/2	+ 3/4
29 7/8	16	25 7/8	17	37,450,850	50	Producers & Refiners.	....	Sept. 15, 23	1,400	18	18	†17	17	— 1 1/4
49 5/8	41	45 3/4	38 1/8	2,845,350	50	do pfd.	....	May 1, 25	50	40 5/8	40 5/8	40 3/8	40 1/2	— 1 1/2
31 1/4	19	30 3/4	23 1/2	75,959,255	25	Pure Oil Co.	37 1/2cQ	June 1, 29	15,400	27	27 3/8	26 1/4	26 5/8	— 3/8
119	108	115 1/2	111 1/2	13,000,000	100	do 8% pfd.	$2Q	July 1, 29	60	112	113 3/4	112	112 1/4	0
56	23 1/2	49 5/8	40	47,127,725	25	Richfield Oil.	50cQ	May 15, 29	7,500	42 1/8	42 3/8	40 1/2	41 1/2	— 3/8
....	....	42 1/2	28 1/2	(sh) 1,200,000	N.P.	Rio Grande Oil Co.	‡$1S.A.	Jan. 25, 29	8,700	30 1/4	30 1/2	28	28 1/2	— 1 3/8
64	44 5/8	55 3/4	31 3/4	(sh) 546,646	$13.40	Royal Dutch N. Y. shares.	$1.336	Feb. 8, 29	4,000	53 5/8	54 5/8	52 5/8	53 1/2	+ 1/4
57 1/2	39 3/8	55 3/4	43	(sh) 65,203,000	£2	Shell Transport & T.	96.4c	Feb. 8, 29	.....	.....	.....	.....	.....	.....
39 3/8	23 1/4	31 3/4	26	12,254,979	N.P.	Shell Union Oil.	35cQ	July 1, 29	17,400	26 7/8	27	26 1/2	26 1/2	+ 3/8
27 1/4	18 1/8	37 7/8	18 1/4	$8,357,280	$10	Simms Petroleum.	40cQ	June 15, 29	72,100	33 3/8	*37 1/8	32 1/2	37 7/8	+ 5 3/8
46 3/4	17 3/8	45	35 1/2	5,494,095	N.P.	Sinclair Consolidated.	‡50cQ	July 15, 29	78,400	37 1/4	37 1/4	†35 1/2	35 1/2	— 1 5/8
110	102 1/2	111	107 3/4	$16,025,200	$100	do pfd.	$2Q	May 15, 29	200	109	109 1/8	109	109 1/8	+ 1/8
42 5/8	25	46 1/2	32 7/8	27,396,590	25	Skelly Oil Co.	50cQ	June 15, 29	16,500	43 1/4	43 3/8	40 1/2	40 3/4	— 1 3/8
80	53	81 7/8	64	(sh) 13,016,435	N.P	S. O. California.	62 1/2cQ	June 15, 29	38,200	73 1/2	74	72	72 1/4	— 1/2
59 3/4	37 3/4	62 3/8	48	$612,095,850	$25	S. O. New Jersey.	‡25cQ	June 15, 29	51,600	57 3/4	58 1/4	56 7/8	57 1/8	— 3/8
45 1/2	28 3/4	45 3/4	38 5/8	434,094,575	25	S. O. New York.	40cQ	June 15, 29	32,200	39 3/4	39 7/8	38 5/8	39	— 3/8
77	31 1/2	68 1/2	57	(sh) 1,297,847	N.P.	Sun Oil.	25cQ	June 15, 29	4,400	74 3/4	76 3/8	72	72 1/2	— 2 1/2
110	100	105 1/2	100	$5,000,000	$100	do pfd.	$1.50Q	June 1, 29	140	101	103	101	102	+ 2
14 1/4	2 1/2	12	7	(sh) 1,304,698	N.P.	Superior Oil Corp.	....	Dec. 20, 20	86,600	8	8 1/8	7 1/2	7 5/8	— 1/4
74 3/4	50	68 1/2	57 1/4	$211,082,925	$25	The Texas Corp.	75cQ	July 1, 29	39,500	62 3/4	63 3/8	61 5/8	62 1/8	— 3/4
26 5/8	12 1/8	23 7/8	16 1/4	8,380,340	10	Texas Pacific Coal & Oil.	2 1/2%s	June 30, 29	7,300	17 3/8	18	17	17 1/4	— 1/8
41 1/2	19 5/8	38 1/2	27 1/8	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	June 30, 29	1,600	33 3/8	34 1/4	33 3/4	33 1/2	— 3/8
100 1/8	86 3/4	97 1/2	89 3/4	$20,321,000	$100	do 5 1/2% pfd.	$1.25Q	May 15, 29	5,600	92	92 7/8	91	92	— 1
25	14 3/4	23 1/2	17 1/2	(sh) 4,877,976	N.P.	Tide Water Associated.	....	Aug. 1, 27	24,200	19 3/4	20 3/8	19 1/2	19 5/8	0
91 3/4	81 7/8	90	84	$72,989,200	$100	do pfd.	$1.50Q	July 1, 29	1,400	87	87 1/2	87	87 1/2	+ 3/8
14 1/2	6 3/4	13	9	(sh) 3,842,029	N.P.	Transcontinental Oil.	....	.....	74,100	11 3/8	12 1/2	11 1/4	11 7/8	+ 3/8
58	42 3/4	54 1/2	46	$40,858,375	$25	Union Oil of California.	50cQ	May 10, 29	5,100	48 3/8	48 1/2	47 1/4	47 1/2	0
128 1/8	110	152	121 7/8	31,101,200	100	Union Tank Car Co.	$1.25Q	June 1, 29	1,000	148	152	148	152	+ 4
44 7/8	26	42 7/8	28 1/2	(sh) 488,359	N.P.	Warner Quinlan.	50cQ	July 2, 29	5,900	34	34 1/2	31 1/2	32	— 3/4
38	20 1/8	37 7/8	30 1/4	(sh) 490,000	N.P.	White Eagle Oil & Refining.	50cQ	July 20, 29	6,500	33 3/4	34 1/2	33 1/4	33 1/2	— 1/8
22 1/8	17 1/4	29 3/4	18 1/8	(sh) 428,967	N.P.	Wilcox Oil & Gas.	....	May 10, 28	6,000	19 1/4	19 5/8	†18 1/8	19	— 1

*New High †New Low XEx-dividends ‡Also extras s Stock Total Sales 1,315,200

Pittsburgh Stock Exchange

Transactions Week Ended July 12, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas.	27,718	*12 3/4	9	12 3/4	+3 3/4
do pfd.	8,310	8 1/4	8 1/8	8 1/4	+ 1/8
Columbia Gas.	50	85 1/8	85 1/8	85 1/8	....
Devonian Oil.	100	9	9	9	0
Dixie Gas & Util.	320	17	16	16	— 1/4
Lone Star Gas.	85	85 1/8	83 1/2	85 1/8	+3 1/8
Petroleum Ex.	100	30	30	30	+ 1/2
Phoenix Oil pfd.	500	.30	.30	.30	—.15
Pgh. Oil & Gas.	95	3 1/2	3 1/2	3 1/2	0
Salt Creek Cons.	100	3 1/2	3 1/2	3 1/2	0
Plymouth Oil.	1,350	24	23 1/2	24	0
Unlisted					
Lone Star w.i.	9,489	*35	33 5/8	35	+1 1/4
do rights	3,645	7	6 5/8	7	+ 1/4
C. G. & E. rights.	737	6	5 3/4	6	+ 3/8

*New high

Pittsburgh Curb Market

Transactions Week Ended July 12, 1929

	Sales	High	Low	Last	Change
Ark. Gas "A".	1,977	*12 1/2	9 1/4	12 1/2	+3 1/2
Leonard Oil & Dev.	2,100	4 3/4	4 1/2	4 3/4	+ 3/4
Phoenix Oil.	1,400	.35	.30	.35	—.05

*New High

Grimm Quits George F. Getty, Inc.

LOS ANGELES, July 11.—H. Paul Grimm, vice president and general manager of George F. Getty, Inc., is severing his connection with that company. For a number of years, George F. Getty has not taken an active part in the management of his company, and the burden has fallen on the shoulders of Mr. Grimm, under whose direction it has become one of the leading Independent operators in California. Its interests are as scattered as those of many of the major companies, although, of course, its holdings are not so large.

J. Paul Getty, son of George F. Getty, becomes the new production manager. He has had previous business relations with his father, but for the past few years has been operating independently.

Cleveland Stock Market

July 13	Par Value	Bid	Asked
Canfield Oil Co.	$100	...	143
do pfd.	100	103	...
Fred G. Clark.	10	13	14
National Refining.	25	..	36 1/2
do pfd.	100	...	135
Paragon Refining.	25	23 1/4	23 3/4
do pfd.	N.P.	41 1/2	44
do ctfs. of deposit	..	23 1/2	23 3/4

xEx dividend.

Oil Company Earnings

First Half	1929	1928
Oil Shares, Inc.	$617,690	.....
Union Oil.	7,000,000	$5,800,000
Superior Oil	135,260	*501,045
Second Quarter	**1929**	**1928**
Oil Shares Inc.	$201,108	.....
Superior Oil.	122,735	*$226,631

*Loss.

YOU don't have to experiment—

we have done it

Thirty-six years ago the PITTSBURGH EQUITABLE METER COMPANY built their first liquid meters. These meters were constantly improved and refined. In 1912 we produced our first gasoline meter.

Today—after seventeen more years of continued research and development the Pittsburgh Gasoline Service Station Meter is the criterion of quick, accurate measurement.

PITTSBURGH EQUITABLE METER COMPANY

MAIN OFFICE AND WORKS PITTSBURGH, PA.

NEW YORK CHICAGO COLUMBIA, S.C. LOS ANGELES DALLAS
TULSA SEATTLE KANSAS CITY SALT LAKE CITY

Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended July 13 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¼	£4,126,460	£ 1	Anglo-American Oil	36c	June 5, 29	1,200	14⅞	15⅜	14¾	15	0
21¼	15	18	14¼	.....	....	do certificates	36c	June 5, 29	.....	.....	.....	.....	.....	.....
20½	14⅜	17	13	.....	L 1	do cts. non-voting	36c	June 5, 29	200	14	14	14	14	+ 1
5	1¼	2⅜	1⅛	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	1¼	1¼	1¼	1¼	— ⅛
9¾	3¼	4⅛	1½	$10,000,000	$50	do pfd	.....	.....	100	2⅜	2⅜	2⅜	2⅜	+ ⅛
56	44½	46½	35	$1,000,000	25	Borne-Scrymser	‡$1S.A.	Apr. 15, 29	150	36	36	†35	35	— 2¾
76	58	74¼	58¾	10,000,000	50	Buckeye Pipe Line	‡$1Q	June 15, 29	200	69¼	69½	69	69	0
161	117¼	193⅜	140⅛	3,000,000	25	Chesebrough Mfg	‡$1Q	June 30, 29	1,700	170	*193⅜	170	180	+12¼
23	16	29	17⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	8,500	21¼	21¼	20⅛	20½	— ⅝
17½	9½	11⅜	7⅜	.....	N.P.	Creole Petroleum	.....	.....	8,400	8¼	8⅜	†7⅜	8	— ¼
82	67	75¾	62	1,500,000	50	Cumberland Pipe Line	$1Q	June 15, 29	.....	.....	.....	.....	.....	.....
88	64⅛	70½	59¼	5,000,000	100	Eureka Pipe Line	$1Q	June 1, 29	.....	.....	.....	.....	.....	.....
13	4¼	6⅝	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
86	26	90	73½	4,000,000	100	do new pfd	....	June 30, 26	.....	.....	.....	.....	.....	.....
89¾	35	88	73½	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
114¾	59¼	126⅞	89⅝	73,685 700	25	Humble Oil & Refining	‡30cQ	July 1, 29	36,800	123⅜	*126⅞	121⅛	125	+ 3⅝
290½	176½	340½	285	20,000,000	100	Illinois Pipe Line	$10S.A.	June 15, 29	250	306	309	306	309	+ ¼
104	56¾	119⅝	88	(sh) 6,605,442	N.P.	Imperial of Canada	12½cQ	June 1, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	do new	.....	.....	39,800	28⅞	30⅜	28½	29¾	+ 1¾
91⅞	74⅜	104	81¼	$5,000,000	$50	Indiana Pipe Line	‡$1Q	May 15, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	do new	.....	.....	300	27	27	26¾	26¾	0
55	35	65½	46⅛	(sh) 7,123,544	N.P.	International Petroleum	12½c	June 25, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	do new	.....	.....	19,800	26¼	26½	24½	25	— 1¼
32⅜	19⅜	25⅞	21⅜	$6 363,350	12.50	National Transit Co	25cQ	June 15, 29	600	23	23½	23	23	0
75	38½	85	72	5,000,000	100	New York Transit	....	July 15, 26	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	do new	.....	.....	200	14½	15¾	14½	15	0
69	56½	63	52	2,000,000	50	Northern Pipe Line	$2S.A.	July 1, 29	100	58¾	58¾	58¾	58¾	0
83½	58½	75⅜	64⅛	60,000,000	25	Ohio Oil Co	50cQ	June 15, 29	1,200	71¾	72⅜	71⅜	71⅞	+ ⅛
84	28	44½	23⅛	10,000,000	25	Penn Mex. Fuel	75c	Dec. 16, 28	2,800	28¼	40	27¼	39¾	+11⅜
220	167	50	38½	4,000,000	25	Solar Refining	$1.25S.A.	June 20, 29	100	37¾	39⅜	39⅜	39⅜	+ ⅞
19	12	22⅛	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	200	20½	21	20½	21	— ½
71⅞	36¾	60¼	40⅜	30,000,000	25	South Penn Oil	50cQ	June 30, 29	3,100	53	53¼	52⅞	52⅞	0
102	70	70	62¾	1,750,000	50	South West Pa. Pipe Lines	$1	July 1, 29	50	65¾	65¾	65¾	65¾	+ 2½
95⅞	70⅞	103¼	54	348,175,069	25	S. O. Indiana	62½cQ	June 15, 29	18,000	57	57⅞	55⅝	56	— 2
27¾	15	21⅞	18	8,000,000	25	S. O. Kansas	....	June 16, 24	600	21½	21½	20¼	20¼	— 1⅜
49	44	45¼	35⅛	25,654,516	10	S. O. Kentucky new	40cQ	June 30, 29	4,200	38⅝	38⅝	37⅛	37½	— 1⅛
54⅝	39⅞	50¼	45½	4,649,225	25	S. O. Nebraska	‡62½cQ	June 20, 29	300	47⅛	47⅛	47	47	— 1
134	71	129	110¼	14,000,000	25	S. O. Ohio	62½cQ	July 1, 29	550	119¼	121	119	121	0
125	116	124½	115	7,000,000	100	do pfd	$1.75Q	June 1, 29	10	117½	117½	117½	117½	+ ¾
23½	16	18	14	861,466	25	Swan Finch Co	30c	Jan. 15, 29	300	15	15¼	15	15¼	+ 1½
111	72	133¾	105½	126,154,000	25	Vacuum Oil	$1Q	June 20, 29	3,100	117⅜	119⅝	117⅜	119½	+ 3½

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Sales	Week Ended July 13 First	High	Low	Last	Change
1½	.53	.72	.375	$ 5	Amer. Cons. Oilfields	3,500	½	½	1/16	1/16	— 1/16
9½	3⅛	8⅝	3½	N.P.	Amer. Maracaibo	1,000	3⅞	4	3⅞	3⅞	0
4½	2¼	5	1⅞	$ 10	Argo Oil	200	2	2⅛	2	2⅛	+ ⅛
3¾	3⅜	13	3¾	N.P.	Arkansas Nat. Gas	16,700	9	*13	9	13	+ 3⅜
....	....	12⅝	6¾	N.P.	do A	141,000	9⅜	*12⅝	9⅜	12⅝	+ 3¼
....	....	9	7⅞	10	do pfd	300	8⅛	8⅜	8⅛	8⅜	+ ⅛
55	32¾	62	50	N.P.	British American Oil	.....	.....	.....	.....	.....	.....
23⅞	3¾	4⅞	2⅝	25c	Carib Syndicate	2,200	4½	4½	3½	3½	— 1
....	....	40¾	27¾	N.P.	Cities Service new	9,200	37	*40¾	36⅞	40¾	+ 3⅜
103½	94½	98½	88⅜	100	do pfd	400	94⅞	94⅞	94	94	— 1
9⅝	8⅞	9¼	8⅞	10	do pref. B	200	9	9	9	9	0
97	88½	96	92	100	do pref. BB	.....	.....	.....	.....	.....	.....
2¼	1	1½	⅝	1	Colombia Syndicate	1,000	⅞	1	¾	¾	— 1/16
17¾	9¾	15	6	N.P.	Colon Oil	8,100	7⅛	7⅞	7⅛	7¼	— ⅛
8⅞	6¼	11⅛	5⅞	10	Consolidated Royal	800	6½	6½	†5⅞	6⅜	— ⅛
....	....	92¼	45	N.P.	Cosden Oil Co	8,500	81¼	*92¼	81¼	92¼	+ 4¾
....	....	....	....	....	do new	.....	.....	.....	.....	.....	.....
3¼	.76	2½	1⅛	N.P.	Crown Central	1,500	1½	1½	1¼	1⅜	— ⅛
15	6¾	11¾	8	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
50	48	51⅛	51⅛	$100	do pfd	.....	.....	.....	.....	.....	.....
33½	8½	26	14	N.P.	Darby Petroleum	400	15⅛	16¼	14¼	15	— 1⅜
13½	7⅞	....	....	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2⅞	1	10⅞	2	N.P.	Derby Oil & Refining	13,100	10¾	10⅞	9¼	9¼	— ⅞
21⅛	7½	44	20⅞	N.P.	do pfd	.....	.....	.....	.....	.....	.....
165	101¼	202⅞	142⅛	$25	Gulf Oil Corp	54,800	177	*202⅞	175¼	195	+18⅝
7½	5⅝	7½	3⅝	5	Homaokla Oil	400	3⅞	3⅞	3⅞	3⅞	+ ⅛
3⅜	1	2⅞	1¼	10	Intercontinental Pet	5,400	1⅜	1⅜	1¼	1¼	— ⅛
3	¼	3⅜	1½	N.P.	Kirby Petroleum	1,400	1¾	1⅞	1⅝	1⅞	+ ¼
9⅜	5⅛	6½	2⅞	N.P.	Leonard Oil & Dev	18,900	3⅞	4⅞	3¾	4⅞	+ 1¼
43⅜	20	38⅞	24¾	N.P.	Lion Oil & Refg	900	34⅞	35	33	33⅛	— 1⅝
69⅛	48⅛	87	67	$25	Lone Star Gas	400	81⅝	85	81⅝	85	+ 4
....	....	....	....	....	do new	5,300	33¾	35	33½	34¾	+ 1
1⅞	.50	1¼	⅜	1	Magdalena Syndicate	28,300	1/16	½	⅜	⅜	0
48½	32	38½	21¼	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
40½	40½	....	....	$10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
8	2¾	6⅜	3⅜	N.P.	Mexico-Ohio Oil	100	2¾	2¾	2¾	2¾	— 1¼
.74	.20	....	....	$10	Mexico Oil	.....	.....	.....	.....	.....	.....
....	....	42	15⅞	N.P.	Missouri-Kan. P. L.	3,800	30⅞	30⅞	28⅛	29	— 1½
1¾	.76	1½	⅞	1	Mountain & Gulf	800	⅞	⅞	⅞	⅞	0
28⅞	19½	22⅞	12	10	Mountain Producers	4,800	14¾	14⅞	†12	13¼	— 1⅜
....	....	35⅞	24¾	N.P.	Nat. Fuel Gas (new)	800	34	35⅜	34	34½	+ 2⅛
5⅝	4¼	5	3⅜	5	New Bradford	3	3⅝	3⅝	†3⅜	3½	0
5½	3	3½	3	10	New England Fuel	.....	.....	.....	.....	.....	.....
11⅞	7⅛	9⅜	5½	1	New Mex. & Ariz	300	5¾	6½	5⅝	6½	+ 1
15½	11½	24½	16	25	New York Petrol	200	16¾	16⅞	16¾	16⅞	+ ⅛
40	39¼	....	....	....	North Amer. Oil Cons	.....	.....	.....	.....	.....	.....
13¼	8⅛	11⅝	8¾	N.P.	North Cent. Texas	600	11⅛	11⅛	11	11⅛	0
....	....	19¼	13	N.P.	Oil Stock, Ltd. A	200	13¾	13⅞	13½	13⅝	— ¾
....	....	18¼	15	N.P.	do B	.....	.....	.....	.....	.....	.....
26¼	20	23¼	16	N.P.	Pacific Western Oil	900	16½	16⅜	16	16⅛	+ ⅛
6	2¼	3½	1⅜	N.P.	Pandem	1,800	1⅝	1¾	†1⅜	1½	— ⅛
15⅝	8½	10¼	6	N.P.	Pantapec	180	6⅜	6⅜	6⅛	6⅜	+ ⅜
20	10⅜	25½	22½	$25	Paragon Refg. B. ctfs	100	23½	23½	23½	23½	— ½
.09	.04	....	....	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
7¾	4⅞	7⅜	4⅜	$10	Pennok Oil	.....	.....	.....	.....	.....	.....
....	....	34½	26½	N.P.	Petroleum Corp	6,800	28¼	29	27½	28½	0
5⅜	3⅛	....	....	$ 5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
31⅜	26½	30	22	N.P.	Plymouth Oil	900	23	23¾	22⅞	23¾	— ⅝
18	8	16	11½	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
13	4⅛	8½	4½	N.P.	Reiter-Foster	7,300	5⅝	7⅜	5¾	5¾	+ ¾
31½	23¼	25½	23⅞	$25	Richfield pfd	100	24¾	24¾	24¾	24¾	+ ⅝
....	....	29	23	....	Root Refining pfd	800	25¾	26⅛	25¼	25¼	— ½
12	4⅝	11	6¼	N.P.	Ryan Consolidated	100	6¼	6¼	†6⅛	6¼	— ⅛
7¼	5½	5⅞	3¼	$10	Salt Creek Cons	100	3⅛	3⅛	3⅛	3⅛	— ⅛
35	23¼	25⅞	15	10	Salt Creek Prod	600	18¼	18½	†15	16⅞	— 2⅝
3½	1	2½	1⅛	5	Savoy Oil	200	1⅛	1⅛	†1⅛	1⅛	0
40	27	33⅜	32	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
....	....	24	17¼	N.P.	Southland Royalty	1,200	17½	18	†17¼	17⅞	+ ¼
....	....	23	12⅝	N.P.	Texon Oil & Land new	1,600	16	16	†12⅝	14	— 2
22⅛	13	16⅞	11⅝	$10	Tidal Osage	.....	.....	.....	.....	.....	.....
21¼	13⅛	16½	10⅛	10	do not-voting	.....	.....	.....	.....	.....	.....
93¾	75	145	80	100	Transcontinental pfd	400	137	*145	137	145	+ 5½
74⅛	18	71½	66	10	Venezuela-Mexico	300	71½	*71½	71½	71½	+ 2
9⅝	4⅜	6½	3½	5	Venezuelan Petrol	3,200	3⅞	3⅞	†3½	3½	— ½
8¼	4⅞	9⅜	4⅜	1	Woodley Petroleum	600	4¼	4½	4¼	4½	+ ⅛
⅜	⅛	5⅜	1⅜	25	Y Oil & Gas	200	1⅝	1⅝	1⅝	1⅝	— ⅛

*New High †New Low

New York Curb Bonds

Week Ending July 12, 1929

	High	Low	Last	Change
Beacon Oil 6s '36	118½	116	118½	+3
Cities Serv. 5s '66	86¾	85¼	85¼	+1⅛
Cities Serv. G. 5½s '42	88	86⅞	87⅛	+ ½
Cities Serv. G. P. 6s '43	94⅞	91	92⅝	—1⅝
Cont. Oil 5½s '37	94	93	94	+1
Empire O & R 5½s '42	87¼	86⅜	86¾	+ ⅛
Gulf Oil 5s '37	99¼	98¾	98¾	— ½
Gulf Oil 5s '47	100	99¾	99¾	0
Indep. Oil 6s '39	109½	107½	109	— ¼
Richfield Oil 6s '44	101	99¾	100⅜	+ ⅜
Richfield Oil 5½s '31	100¾	100¾	100¾	— ¼
Sun Oil 5½s '39	100	99½	99¾	0

Oil Dividends

	Amount	Payable	Stock of Record
Richfield Oil q	50c	Aug. 15	July 20
Shell T. & T.	$1.447	July 23	July 16
Sinclair Cons. Oil pfd. q	$2	Aug. 15	Aug. 1
Tide Water Oil pfd. q	$1.25	Aug. 15	July 22
Union Oil q	50c	Aug. 10	July 18

New York Bonds

Week Ending July 12, 1929

	High	Low	Last	Change
Assoc. Oil gold 6s	101½	101	101	— ¼
Atlantic Refg. deb. 5s	101¼	100	100⅛	0
Cal. Pet. 5s	96	96	96	— ½
Cal. Pet. 5½s	100½	99⅛	100⅛	+ ½
General Asphalt 6s	105	104	104½	—1
General Pet. 5s	100⅞	100¼	100¼	0
Humble Oil & Refg. 5s	100¼	100	100¼	0
Humble Oil & Refg. 5½s	100⅞	100¼	100¼	— ⅝
Pan Amer. P & T 7s	104½	104½	104½	— ⅝
Pan Amer. P & T 6s	108	107½	107½	0
Pan Amer. P & T 6s	95	94½	95	+1
Phillips Pet. 5½s	89¾	89¼	89¼	+ ½
Pierce Oil deb. 8s	105¾	105½	105½	— ¼
Pure Oil 5½s	98	97⅜	97½	+ ⅜
Shell Union Oil 5s	95½	94¾	94¾	+ ⅛
Sinclair Con. Oil 7s	101⅞	100¾	100¾	— ¾
Sinclair Con. Oil 6½s	100	99	99⅝	— ⅜
Sinclair Con. Oil 6s D	99¼	99	99¼	+ ¼
SinclairCon.OilCrude5½s	96	94¾	96	+1¼
Sinclair Pipeline	94	93½	93⅝	+ ⅛
Skelly Oil 5½s	93	92	92	— ¾
S. O. N. Y. 4½s	95¼	94½	95	0
S. O. N. J. 5½s	101	100½	100⅝	— ⅞
Union Oil of Calif. 6s A	106½	106½	106½	0
Union Oil of Calif. 5s C	97½	96⅜	97½	0
Warner Quinlan 6s	96½	94½	95	+ ½
White Eagle Oil 5½s	99¾	99	99¼	+ ⅜

Book Reviews

"Standard Methods of Testing Petroleum and Its Products," has just appeared in its second edition under the auspices of the Institution of Petroleum Technologists of England. The Institution is the leading association of petroleum technologists in Great Britain and occupies a very high plane in the scientific world.

The preparation of the work was in the hands of a standardization committee of the Institution which was appointed in 1921. Its object was so far as possible to help along the movement toward standardization. In a preface to the second edition, acknowledgment is made to the American Society for Testing Materials and the U. S. Bureau of Standards.

Some of the tests devised by these two organizations are incorporated in the book but in other cases, it is stated, certain other tests and methods had become so well established in the British oil world that it seemed inadvisable to change them, even in the interest of uniformity.

The book is priced at 7 shillings and sixpence net, which is about $1.80.

California Exports Show Increase

LOS ANGELES, July 11.—Exports of petroleum products from Los Angeles Harbor showed a substantial increase for the fiscal year ending June 30, over the shipments for the same period ending June 30, 1928. The 1929 total was 118,712,168 barrels as compared with 113,618,487 barrels for the preceding year and 115,954,125 barrels for the 1927 period.

Fuel oil and gasoline headed the list with 39,594,297 barrels and 39,350,136 barrels respectively. Crude oil shipments amounted to 29,622,230 barrels while Diesel oil and kerosene followed with totals of 4,938,455 barrels and 4,317,236 barrels for 1929.

CLEVELAND, July 13.—A capacity chart for passenger cars has been prepared by S. F. Bowser & Co., Inc., Ft. Wayne, Ind. The chart lists the gasoline capacity in gallons, crank case in quarts and differential and transmission capacities in pounds.

For cold weather use the radiator capacity is shown with notations as to proper volume of alcohol to add for 10 F., zero and 10 below zero. The chart was prepared from data furnished by motor car manufacturers.

Copies are free to those writing direct to the company.

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Aluminum Company of America
American Can Co.
American Commercial Alcohol Corp.
American Flange & Mfg. Co.
American Fomon Co.
American La France & Foamite Corp.
American Oil Pump & Tank Co. 24
American Oil Works Co.
American Radiator Co.
American Schaeffer & Budenberg Corp.
American Stainless Steel Co. 61
American Telephone and Telegraph Co.
Anderson Prichard Oil Corp. 93
Artcraft Sign Co.
Aurora Equipment Co.
Autocar Co.
Au-to Compressor Co.
Automobile Rotary Lift Co.

Babcock & Wilcox Tube Co.
Badger & Sons Company, E. B.
Barnsdall Refineries, Inc.
Battenfeld Grease & Oil Co. 12
Bennett Export Corp. 100
Bennett Pumps Corp. 100
Berry, Jas. B. Sons, Inc.
Bessemer Gas Engine Co. 78
Bethlehem Steel Co. 123
Bigge Boiler Works Co. 137
Birmingham Tank Co. 116
Blackmer Pump Co.
Boe Mfg. Co.
Bowser & Co., Inc., S. F.
Braden Engineering Inc.
Braun & Co., C. F.
Brookins Mfg. Co.
Brown Sheet Iron & Steel Co. 135
Buckeye Iron & Brass Works 2
Budd Wheel Co.
Buffalo Meter Co. 141
Bullard Davis, Inc. 68
Burford Oil Co. 99
Butler Mfg. Co.
Byron Jackson Co.

Campbell, J. A. 72
Canfield Oil Co., Cleveland
Carbondale Machine Co.
Central Alloy Steel Corp.
Champion Pneumatic Mach. Co. 133
Champlin Refining Co.
Chestnut & Smith Corp.
Chevrolet Motor Co.
Chicago Bridge & Iron Works 127
Cincinnati Advertising Products Co.
Classified Advertising 151
Clear Vision Pump Co.
Cleveland Brass Mfg. Co.
Col-Tex Refining Co. 93
Columbian Steel Tank Co. 101
Combustion Engineering Corp.
Continental Can Co. 13
Continental Refining Co.
Continental Rubber Works
Continental Supply Co.
Cooke Seal Ring
Cooper-Bessemer Corp. 78
Cooper Co., C. & G. 78
Corey & McKenzie Co. 120
Correct Measure Co. 8-9
Crocker-Wheeler Electric Mfg. Co.
Crouse-Hinds Co.
Crown Central Petroleum Corp.
Curtis Pneumatic Machinery Co. 110-111

Dalton, W. A. 141
Daugherty & Son Refg. Co., W. H. 144
Davis & Gant Mfg. Co., The
Davis Welding & Mfg. Co. Third Cover
Dayton Air Compressors 119
Deepwater Oil Refineries 114
Detroit Graphite Co.
Dill Manufacturing Co.
Dodge Bros.
Dodge Steel Co.
Draper Mfg. Co.
Dunlop Tire & Rubber Co.
du Pont de Nemours, E. I. & Co., Inc.
Dyestuffs & Chemicals, Inc.

Eason Oil Co.
Eaton Bumper & Spring Service Co.
Edeleanu Process 82
Edwards Mfg. Co 112
El Dorado Refg. Co. 103
Electric Service Supplies Co.
Ellis & Sons, Inc., George D.
Emerson-Scheuring Tank Co.
Empire Oil Works, Inc. 14
Empire Oil & Refining Co. 16
Erie Meter Systems, Inc.

Ethyl Gasoline Corp.
Eureka Machine Co.

Farrell Mfg. Co.
Federal Motor Truck Co.
Federal Products Co.
Ferro Machine & Foundry Co. 17
Fiske Bros. Refg. Co.
Flexlume Corp. 135
Foster-Wheeler Corp. 84
Foxboro Co., Inc.
Franklin Creek Refg. Co. 144
Freedom Oil Works 117
Fruehauf Trailer Co.

General American Tank Storage & Terminal Co.
General Motors Truck Co.
General Porcelain Enameling & Mfg. Co. 144
Gilbert & Barker Mfg. Co. 91
Globe Machinery & Supply Co. 20-21
Globe Oil & Refg. Co. 10
Goodrich Rubber Co., B. F. Insert
Goodyear Tire & Rubber Co., Inc. 11
Gott Mfg. Co., H. P. 46
Granberg Meter Corp
Graver Corp. 1
Gray Co., Inc.
Gray Processes Corp. 73
Greenspon's Sons Iron & Steel Co., Jos. 49
Griscom-Russell Co.
Gulf Ref. Co. 137

Halliburton Oil Well Cementing Co.
Hayes Equipment Mfg. Co.
Haynes Stellite Co.
Heat Transfer Products, Inc.
Heine Boiler Co.
Highland Body Mfg. Co.
Holmes, Ernest
Hughes Tool Co. 67
Humble Oil & Refg. Co. 5
Huntley & Huntley
Hybinette, Victor

Imperial Refg. Co. 147
Independent Oil & Gas Co.
Industrial Alcohol Institute Inc.
Industrial Chemical Mfg. Co.
Industrial Oil Corp.
International Combustion Eng. Corp.
International Derrick & Equipment Co.
International Harvester Co.
International Petroleum Exposition

Jackson Co., Byron
Jenkins Bros.
Jiffe Co.
Johnson Oil Refg. Co.

Kanotex Ref. Co. 97
Kellogg Co., M. W. Insert
King-Seeley Corp.
Korect Air Meter Corp.

Ladd Water Tube Boiler Co.
Leach Co., C.H. 87
Leader Iron Works 139
Lion Oil Refining Co.
Liquidometer Corp.
Louisiana Oil Refg. Co.
Luce Trunk Co. 120
Ludlum Steel Co.

MacBeth Evans Glass Co.
Manufacturers Distribution Agency
Marland Refg. Co.
Mars Company
Martin & Schwartz, Inc.
McDonald Mfg. Co., A. Y.
McKee & Co., Arthur G.
Merco Nordstrom Valve Co.
Merit Equipment Corp.
Metal Hose & Tubing Co. 19
Metal Shelter Co.
Metric Metal Works
Metropolitan Body Co.
Meyercord Co.
Mid-Continent Petroleum Corp.
Milestone Meter Systems, Inc.
Miller Sons' Co., A. D.
Milwaukee Tank Works 15
Morrison Bros. 4
Mutual Refg. Co.

National Cantube Co.
National Carbon Co.
National Petroleum News 22-144
National Recording Pump Co. Second Cover
National Refining Co. 141
National Safe & Lock Co.
National Service Station Equipment Co.
National Steel Barrel Co.
National Transit Pump & Machine Co. 75
National Tube Co.
Naturaline Company of America
New York Lubricating Oil Co. 23
North American Car Corp.
Northern Pump Co.

Oakite Products, Inc.
Ohio Steel Foundry Co.
Ohmer Fare Register Co.
Oil Conservation Engineering Co.
Oildraulic Lift Co.
Oil Products Appliance Co.
Oil Well Supply Co. 62
Oliver United Filters, Inc. 72
Ottawa Mfg. Co.
Owens-Illinois Glass Co.
Oxweld Acetylene Co.

Pennsylvania Refg. Co.
Perfection Mfg. Co. 95
Petroleum Exchange Corp.
Petroleum Iron Works Co. 6
Petroleum Oils Corp. 112
Pforzheimer & Co., Carl H.
Phillips Petroleum Co. 7
Pittsburgh-Des Moines Steel Co.
Pittsburgh Equitable Meter Co. 149
Platt Co., W. C. 118
Pressed Steel Tank Co. 18
Producers & Refiners Corp. 105-106-107-108
Pure Oil Co. Fourth Cover
Pyrene Mfg. Co.

Quincy Compressor Co.

Rand McNally & Co. 109
Rankin-Benedict Co.
Reading Iron Co.
Reid Gas Engine Co., Joseph
Republic Steel Package Co. 100
Rheem Mfg. Co.
Roper Corp., Geo. D. 118
Rossville Commercial Alcohol Corp.

Safety Lift Co.
Sall Bros. Co.
Seaboard Chemical Co.
Selden Co.
Service Station Equip. Co. 100
Service Recorder Co.
Shaffer Oil & Refg. Co.
Sharpsville Boiler Works Co.
Shell Petroleum Corp.
Shepard Corp., Arthur B.
Shreveport-El Dorado Pipe Line Co., Inc.
Simms Oil Co.
Sinclair Refining Co. 124
Sistersville Tank & Boiler Works
Skelly Oil Co.
Smith Engineering Co.
Sonneborn Sons, Inc., L.
Southwestern Engineering Corp.
Spang, Chalfant & Co., Inc. 71
Standard Boiler & Plate Iron Co.
Standard Steel Works
Steel Drum Accessories Corp.
Sterling Motor Truck Co. 116
Sterling Oil Co.
Sun Oil Company
Sun Shipbuilding & Dry Dock Co.
Superior Oil Works
Swan-Finch Refg. Co.

Tagliabue Mfg. Co., C. J.
Taylor Instrument Companies 46
Texas-Mexican Oil & Refg. Co.
Texas Pacific Coal & Oil Co.
Tokheim Oil Tank & Pump Co. 113
Trailmobile Co.
Transcontinental Oil Co.
Tube Turns, Inc.
Tulsa Boiler & Machinery Co. 77

Union Carbide & Carbon Corp. 68
Union Metal Mfg. Co.
Union Oil Co. of Pennsylvania
United Oil Mfg. Co. Insert
U. S. Air Compressor Co.
U. S. Pipe & Foundry Co. 44
U S. Industrial Alcohol Co.
Universal Oil Products Co. 81

Vacuum Oil Co.
Viking Pump Co. 127
Vilter Mfg. Co. 73
Viscosity Oil Co. 142
Vogt Machine Co., Henry
Volcker Mfg. Co.

Wadhams Oil Co.
Walworth Co. 3
Waverly Oil Works Co.
Wayne Co.
Westcott & Greis, Inc.
Wheaton Brass Works, A. W. 42
Willock Oil Corp. 119
Wilson & Bennett Mfg. Co. 120

York Safe & Lock Co.
Youngstown Boiler & Tank Co. 123

Zero Hour Torpedo Co. 58